

MINFILE NUMBER: **094A 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **PACIFIC FT ST JOHN NO.44 WELL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094A10E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 56 40 00 N
LONGITUDE: 120 37 25 W
ELEVATION: 700 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6282806
EASTING: 645632

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of Fort St. John No.44 well (Journal of the Alberta Society of Petroleum Geologists, Volume 7, Number 8, 1959).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
COMMENTS: Coarse crystalline barite veins.
ASSOCIATED: Glauconite Pyrite
COMMENTS: Minor glauconite and pyrite above and below barite veins.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Industrial Min.
COMMENTS: Fifteen centimetres of dolomite are cut by veins of coarse barite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Permian-Pennsylvanian

GROUP

Unnamed/Unknown Group

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Fine Grained Dolomite

HOSTROCK COMMENTS: Permo-Pennsylvanian dolomite occurring 9 metres below the base of the Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

The Pacific Fort St. John No.44 well is located 47 kilometres north-northeast of the town of Fort St. John.

A 15-centimetre zone of coarse crystalline barite veins, hosted in cryptocrystalline dolomite, was intersected by drilling to a depth of 1926 metres, 9 metres below the overlying Triassic contact. Minor glauconite and pyrite are hosted in this Permian to Pennsylvanian dolomite above and below the zone.

BIBLIOGRAPHY

GSC MAP 17-1958
Journal of the Alberta Society of Petroleum Geologists, *Vol.7, #8,
p. 181

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/12

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094A 002**

NATIONAL MINERAL INVENTORY:

NAME(S): **IMPERIAL PACIFIC**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094A05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 15 30 N
LONGITUDE: 121 45 11 W
ELEVATION: Metres

NORTHING: 6235531
EASTING: 577247

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of the Imperial Pacific Groundbirch No.5-5-84-24 well
(Journal of the Alberta Society of Petroleum Geologists, Volume 7,
Number 8).

COMMODITIES: Fluorite

MINERALS

SIGNIFICANT: Fluorite
COMMENTS: Light purple to purple fluorite.
ASSOCIATED: Bitumen
COMMENTS: Bitumen stringers.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown
COMMENTS: Fluorite crystals line vugs in dolomite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Unnamed/Unknown Group	Baldonnel	

LITHOLOGY: Dolomite

HOSTROCK COMMENTS: Upper Triassic Baldonnel Formation porous dolomite.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

The Imperial Pacific Groundbirch No. 5-5-84-24 well is located in Section 5, Township 84, Range 24, 56 kilometres west of the town of Fort St. John.

Fluorite, observed in drill core from a depth of 1405.9 to 1410.5 metres, is hosted in Upper Triassic Baldonnel Formation dolomite. Light purple to purple fluorite crystals of varied form, observed in the interstitial vugs of the porous dolomite, were associated with minor bitumen stringers.

BIBLIOGRAPHY

EMPR OF 1992-16
GSC MAP 17-1958
Journal of the Alberta Society of Petroleum Geologists, *Vol 7,
#8, p. 181

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/12

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094A 003**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAR FLATS**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094A06E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 17 12 N
LONGITUDE: 121 12 23 W
ELEVATION: 450 Metres

NORTHING: 6239431
EASTING: 611027

LOCATION ACCURACY: Within 1 KM

COMMENTS: Shale outcrop, possibly exposed in a road cut (Minister of Mines Annual Report 1957, page 82).

COMMODITIES: Shale Clay

MINERALS

SIGNIFICANT: Shale Clay

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: B06 Fireclay
COMMENTS: Clay rich shale beds.

E07 Sedimentary kaolin

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Fort St. John	Unnamed/Unknown Formation	

LITHOLOGY: Shale
Clay

HOSTROCK COMMENTS: Clay-rich recessive shale.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Alberta Plateau

TERRANE: Ancestral North America

COMMENTS: Lower Cretaceous clastics overlie Ancestral North America sediments.

CAPSULE GEOLOGY

The Bear Flats occurrence lies 24 kilometres west of the town of Fort St. John.

Lower Cretaceous Fort St. John Group clay-rich shales were sampled by the Industrial Mineral Division of the Department of Mines and Technical Surveys in 1959. The shales outcrop in deep stream valleys and in roadcuts. The samples were collected as part of a regional program testing the ceramic properties of various clay-rich deposits.

BIBLIOGRAPHY

EMPR AR *1957-82
EMR *Industrial Minerals Report 496
GSC MAP 17-1958

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/12

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094A 004**

NATIONAL MINERAL INVENTORY:

NAME(S): **TAYLOR**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094A02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 58 N
LONGITUDE: 120 40 41 W
ELEVATION: 455 Metres

NORTHING: 6223286
EASTING: 644303

LOCATION ACCURACY: Within 1 KM

COMMENTS: Shale outcrop 400 metres west of the north end of Peace River Bridge at Taylor (Minister of Mines Annual Report 1957, page 82).

COMMODITIES: Shale Clay

MINERALS

SIGNIFICANT: Shale Clay
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: B06 Fireclay
COMMENTS: Clay rich shale beds

E07 Sedimentary kaolin

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Fort St. John	Unnamed/Unknown Formation	

LITHOLOGY: Shale
Clay

HOSTROCK COMMENTS: Clay-rich recessive shale.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Lower Cretaceous clastics overlie Ancestral North America sediments.

PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

The Taylor occurrence lies above the north bank of the Peace River, at the Peace River bridge, 15 kilometres southeast of the town of Fort St. John.

Lower Cretaceous Fort St. John Group clay-rich shales were sampled by the Industrial Mineral Division of the Department on Mines and Technical Surveys in 1959. The shale outcrops in deep stream valleys and along roadcuts. The samples were collected as part of a regional program testing the ceramic properties of various clay-rich deposits.

BIBLIOGRAPHY

EMPR AR *1957-82
EMR *Industrial Minerals Report 496
GSC MAP 17-1958

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/12

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094A 005**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROLLA FERRY**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094A01E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 50 N
LONGITUDE: 120 02 42 W
ELEVATION: 450 Metres

NORTHING: 6224544
EASTING: 683644

LOCATION ACCURACY: Within 1 KM

COMMENTS: Roadcut 400 meters east of the Rolla Ferry north landing
approximately 50 km east south-east of the town of Fort St. John
(Minister of Mines Annual Report 1957, page 81).

COMMODITIES: Shale Clay

MINERALS

SIGNIFICANT: Shale Clay
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: B06 Fireclay E07 Sedimentary kaolin
COMMENTS: Clay rich shale beds.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Fort St. John	Unnamed/Unknown Formation	

LITHOLOGY: Shale
Clay

HOSTROCK COMMENTS: Clay-rich recessive shale.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Alberta Plateau
TERRANE: Ancestral North America
COMMENTS: Lower Cretaceous clastics on Ancestral North America sediments.

CAPSULE GEOLOGY

The Rolla Ferry occurrence lies 400 metres east of the Rolla Ferry north landing, approximately 50 kilometres east south-east of the town of Fort St. John.

Lower Cretaceous Fort St. John Group clay-rich shales were sampled by the Industrial Mineral Division of the Department on Mines and Technical Surveys in 1959. Shale outcrops in deep stream valleys and along roadcuts. The samples were collected as part of a regional program testing the ceramic properties of various clay-rich deposits.

BIBLIOGRAPHY

EMPR AR *1957-81
EMR *Industrial Minerals Report 496
GSC MAP 17-1958

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/12

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094A 006**

NATIONAL MINERAL INVENTORY: 094A2 Fe1

NAME(S): **MOBERLY**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094A02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 30 N
LONGITUDE: 120 56 02 W
ELEVATION: 425 Metres

NORTHING: 6231188
EASTING: 628154

LOCATION ACCURACY: Within 1 KM

COMMENTS: Limonite outcrop 350 meters west of the mouth of the Moberly River (CANMET Investigation Report 2545, 1949).

COMMODITIES: Iron Sulphur

MINERALS

SIGNIFICANT: Limonite
COMMENTS: Porous shaly limonite gossan.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
DIMENSION: 25 x 8 Metres
COMMENTS: Limonite outcrop, 25 by 8 metres.

STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous Fort St. John Unnamed/Unknown Formation

LITHOLOGY: Limonite Shale
Clay Banded Limonite Shale

HOSTROCK COMMENTS: Gossan.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Alberta Plateau
TERRANE: Ancestral North America
COMMENTS: Lower Cretaceous clastics on Ancestral North American sediments.

INVENTORY

ORE ZONE: ROCK REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1949
SAMPLE TYPE: Grab
COMMODITY GRADE
Iron 45.0000 Per cent
Sulphur 4.0000 Per cent

COMMENTS: Assays of two samples averaged 45 percent iron and 4 percent sulphur.
REFERENCE: CANMET Investigation Report 2545, 1949.

CAPSULE GEOLOGY

The Moberly occurrence lies 350 metres west of the mouth of the Moberly River, 6.5 kilometres southwest of the town of Fort St. John. A limonite outcrop, 8 metres thick and 25 metres long, is exposed along the Peace River at the base of Fort St. John Group shale. The limonite has a shaly structure with bands and nodules of clayey material. Assays of two samples collected in 1949 averaged 45 percent iron and 4 percent sulphur (CANMET Investigation Report 2545).

BIBLIOGRAPHY

GSC MAP 1958-17
CANMET IR *2545

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/13

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094A 007**

NATIONAL MINERAL INVENTORY: 094A12 Fe1

NAME(S): **CAMERON RIVER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094A12W 094B09E 094B09W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 31 00 N
LONGITUDE: 121 47 05 W
ELEVATION: 575 Metres

NORTHING: 6264247
EASTING: 574778

LOCATION ACCURACY: Within 1 KM

COMMENTS: Minor workings on bog-iron deposit (Minister of Mines Annual Report 1923, page 145).

COMMODITIES: Iron

MINERALS

SIGNIFICANT: Limonite

COMMENTS: Minerals were not described but the showing is assumed to comprise limonite and hematite.

ALTERATION: Limonite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Recent

DEPOSIT

CHARACTER: Massive Podiform

CLASSIFICATION: Residual

TYPE: B07 Bog Fe, Mn, U, Cu, Au

SHAPE: Cylindrical

COMMENTS: Circular bog-iron masses have diffuse iron stained outer edges.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Lower Cretaceous

GROUP

Fort St. John

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Unconsolidated Gravel
Clay
Shale

HOSTROCK COMMENTS: Unconsolidated gravel and clay on Fort St. John Group shales.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Alberta Plateau

TERRANE: Ancestral North America

COMMENTS: Lower Cretaceous clastics lie on Ancestral North America sediments.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1923

SAMPLE TYPE: Grab

COMMODITY

GRADE

Iron

50.8000 Per cent

COMMENTS: Low grade iron oxide mixed with gravel limits this deposit to only a few hundred tonnes of clean ore.

REFERENCE: Minister of Mines Annual Report 1923, page 145.

CAPSULE GEOLOGY

The Cameron River occurrence is located 65 kilometres northeast of the town of Fort St. John and 16 kilometres upstream from the mouth of the Cameron River.

Numerous iron showings are reported to occur along the length of the Cameron River. The Cameron River occurrence, hosted in gravels which lay on the Lower Cretaceous Upper Shale unit of the Fort St. John Group, comprises small circular bog-iron masses which have relatively pure iron oxide cores and diffuse iron stained outer edges. These deposits are assumed to have originated from a central cold spring, the iron-rich waters precipitating iron oxide after reaching the surface. Six samples collected from minor workings on one showing assayed from 24.4 to 57.2 percent iron (Minister of Mines Annual Report 1923, page 145). Each occurrence is postulated to contain only a few hundred tonnes of clean iron ore.

BIBLIOGRAPHY

EMPR AR 1923-145

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 8
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 17-1958
GSC P 69-11, p. 91

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/07

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094A 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **PEACE RIVER TUFA**, HUDSON HOPE

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094A04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 00 34 N
LONGITUDE: 121 56 56 W
ELEVATION: 457 Metres

NORTHING: 6207629
EASTING: 565538

LOCATION ACCURACY: Within 500M
COMMENTS: Sample site S-1082 on Lot 11.

COMMODITIES: Travertine

MINERALS

SIGNIFICANT: Calcite
MINERALIZATION AGE: Recent

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
DIMENSION: 244 x 90 x 30 Metres STRIKE/DIP:
COMMENTS: Tufa deposit at least 30 metres thick extends for 244 metres along river bank.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent	Undefined Group	Undefined Formation	

LITHOLOGY: Tufa
Black Silty Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1957
SAMPLE TYPE: Grab
COMMODITY Travertine GRADE 49.9800 Per cent
COMMENTS: Grade given for calcium oxide.
REFERENCE: Minister of Mines Annual Report 1957, page 87.

CAPSULE GEOLOGY

A deposit of tufa extends for 244 metres along the north bank of the Peace River on Lot 11, 3.8 kilometres upstream from Hudson Hope. The flat-lying deposit forms cliffs of tufa more than 30 metres high. Chunks of tufa have been plowed up in a field more than 90 metres back from the cliffs. The deposit lies on black, silty shales.

A sample of randomly collected chips from the base of the cliffs contained 49.98 per cent CaO, 1.59 per cent MgO, 5.28 per cent insolubles, 0.80 per cent R2O3, 0.30 per cent Fe2O3, 0.009 per cent MnO, 0.03 per cent P2O5, 0.04 per cent sulphur, 42.30 per cent ignition loss and 0.16 per cent water (Minister of Mines Annual Report 1957, page 87).

BIBLIOGRAPHY

EMPR AR 1957-86,87
GSC MAP 17-1958

DATE CODED: 1989/10/18
DATE REVISED: 1992/03/05

CODED BY: PSF
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094A 009**

NATIONAL MINERAL INVENTORY:

NAME(S): **HUDSON HOPE**

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094A04W
BC MAP:
LATITUDE: 56 01 33 N
LONGITUDE: 121 54 44 W
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample site S-1081.

Underground

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

NORTHING: 6209488
EASTING: 567796

COMMODITIES: Travertine

MINERALS

SIGNIFICANT: Calcite
MINERALIZATION AGE: Recent

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
DIMENSION: 90 x 9 Metres STRIKE/DIP:
COMMENTS: Deposit extends for 90 metres along river bank with a maximum thickness of 9 metres.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Recent	Undefined Group	Undefined Formation	

LITHOLOGY: Tufa

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY: Travertine
GRADE: 53.3800 Per cent

YEAR: 1957

COMMENTS: Grade given for calcium oxide.
REFERENCE: Minister of Mines Annual Report 1957, page 86.

CAPSULE GEOLOGY

Several deposits of tufa occur on the north bank of the Peace River at Hudson Hope. One tufa deposit extends for 90 metres upstream from the ferry landing at Hudson Hope. The deposit is at least 9 metres thick at its centre and continues to be deposited from a spring. A sample of randomly collected chips contained 53.38 per cent CaO, 0.97 per cent MgO, 0.82 per cent insolubles, 0.18 per cent R2O3, 0.09 per cent Fe2O3, 0.003 per cent MnO, 0.01 per cent P2O5, 0.08 per cent sulphur, 44.48 per cent ignition loss and 0.22 per cent water (Minister of Mines Annual Report 1957, page 86). Two adjacent lime kilns indicate that the tufa had been processed (burned) sometime in the past. Another deposit of similar size lies on the river bank 90 metres upstream.

BIBLIOGRAPHY

EMPR AR *1957-86
GSC MAP 17-1958

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/05

CODED BY: GSB
REVISED BY: PSF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 001**

NATIONAL MINERAL INVENTORY: 094B4 Au2

NAME(S): **PETE TOYS BAR**

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094B04W
BC MAP:

Open Pit

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 00 42 N
LONGITUDE: 123 53 36 W
ELEVATION: 670 Metres

NORTHING: 6207738
EASTING: 444302

LOCATION ACCURACY: Within 1 KM

COMMENTS: A gravel bar at Finlay Forks, now under the flood waters of Williston Lake ((Bulletin 21).

COMMODITIES: Gold Platinum

MINERALS

SIGNIFICANT: Gold Platinum

COMMENTS: Fine gold is associated with minor platinum.

MINERALIZATION AGE: Recent

DEPOSIT

CHARACTER: Unconsolidated Stratabound
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Reworked Glacial Gravel

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench

CAPSULE GEOLOGY

Gold and platinum placer occurrences found in the Finlay, Parsnip and Peace rivers have been worked since the first discovery by Bill Cust in 1861. The placers generally occur in the top 1.5 to 3 metres of reworked glacial gravels deposited as bars and benches along streams and rivers. Normally worked by hand, these placer operations had limited success. The gold is fine and flat, and platinum, while common with high values reported locally, was considered unimportant in most of these placers.

Pete Toys Bar is located on the Finlay River, 5 kilometres up-stream from its confluence with the Peace River and 90 kilometres northwest of the town of Mackenzie. Gold recovered from the Finlay River totalled approximately 1060 grams (34 ounces) between 1896 and 1900 and 650 grams between 1926 and 1930. This occurrence is presently covered by the flood waters of Lake Williston.

BIBLIOGRAPHY

EM FIELDWORK 2001, pp. 303-312
EM GEOFILE 2000-2; 2000-5
EMPR AR 1928-C182
EMPR BULL *21, p. 18; 28, p. 44
GSC EC GEOL 13, p. 81
GSC MAP 1634A
GSC SUM RPT 1927, pp. 30-31

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/22

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 002**

NATIONAL MINERAL INVENTORY: 094B2,A3 Au1

NAME(S): **BRANHAM FLATS**

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094B02E
BC MAP:

Open Pit

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 35 N
LONGITUDE: 122 38 52 W
ELEVATION: 550 Metres

NORTHING: 6220202
EASTING: 521896

LOCATION ACCURACY: Within 1 KM

COMMENTS: Centre of Branham Flats (Minister of Mines Annual Report 1923, page A142).

COMMODITIES: Gold Platinum

MINERALS

SIGNIFICANT: Gold Platinum

COMMENTS: Fine flat gold is associated with minor platinum.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated Stratabound

CLASSIFICATION: Placer

TYPE: C01 Surficial placers

DIMENSION: 3220 x 3220 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: Branham Flats covers an area approximately 3 by 3 kilometres.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER
Glacial/Fluvial Gravels

Recent

LITHOLOGY: Reworked Glacial Gravel

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

Gold and platinum placer occurrences found in the Finlay, Parsnip and Peace rivers have been worked since the first discovery by Bill Cust in 1861. The placers generally occur in the top 1.5 to 3 metres of reworked glacial gravels deposited as bars and benches along streams and rivers. Normally worked by hand, these placer operations had limited success. The gold is fine and flat, and platinum, while common with high values reported locally, was considered unimportant in most of these placers.

Branham Flats is located on the Peace River, 110 kilometres west of the town of Fort St. John. Just over 10,000 grams (328 ounces) of gold were recovered from this occurrence between 1931 and 1940 (Bulletin 28, page 47). Although Branham Flats was worked by heavy machinery, numerous tests of the gravels indicate an overall low grade. This occurrence is now covered by the flood waters of Williston Lake.

BIBLIOGRAPHY

EM FIELDWORK 2001, pp. 303-312
EM GEOFILE 2000-2; 2000-5
EMPR AR 1917-141; 1921-118; *1923-142
EMPR BULL 21, p. 18; 28, p. 47
EMPR PF (Dolmage, V. (1962): Report on Branham Flats Placer Deposit)
GSC MAP 1634A
GSC MEM 259, p. 143
GSC P 69-11, p. 90

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/25

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 003**

NATIONAL MINERAL INVENTORY: 094B12W Zn1

NAME(S): **REEF**, MARINI 2

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B12E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 40 12 N
LONGITUDE: 123 40 19 W
ELEVATION: 2050 Metres

NORTHING: 6280855
EASTING: 458821

LOCATION ACCURACY: Within 500M

COMMENTS: Gossan outcrop on the southwest descending ridge of Reef Mountain (Assessment Report 4772).

COMMODITIES: Zinc Lead Silver

MINERALS

SIGNIFICANT: Marcasite
COMMENTS: Lead, zinc and silver from geochemical analysis of hematitic and limonitic gossan.

ALTERATION: Hematite Limonite

ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn
COMMENTS: Gossanous pods weathering out of dolomite breccia.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE Middle Devonian GROUP Undefined Group FORMATION Dunedin IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dolomite Breccia
Dolomite
Limonite Hematite Gossan

HOSTROCK COMMENTS: Dunedin Formation dolomite breccia contains limonite and hematite pods.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Ancestral North America terrane Paleozoic platformal carbonates.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1974
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 3.5000 Grams per tonne
Lead 0.0912 Per cent
Zinc 0.1600 Per cent

COMMENTS: Limonite gossan in dolomite breccia.
REFERENCE: Assessment Report 4772.

CAPSULE GEOLOGY

The Reef occurrence, located near the headwaters of the Graham River, approximately 160 kilometres north of the town of MacKenzie, is hosted in Paleozoic platformal carbonates of the Ancestral North America terrane.

Silurian Nonda Formation, Silurian to Devonian Muncho-McConnell Formation and Lower and Middle Devonian Stone Formation and Dunedin Formation carbonates, overlain by Devonian and Carboniferous Besa River Formation shales, lie on the northeast flank and core of the Bernard anticline, a prominent north trending structure. The north end of the Bernard anticline terminates in a small dome overlain by Upper Silurian and Lower Devonian strata.

Following the Robb Lake discovery (094B 005) in 1970, a regional silt sampling program identified numerous lead and zinc anomalies within the platformal carbonates. Follow-up soil sampling and prospecting led to the discovery of finely disseminated hematite and a moderate amount of limonite forming conspicuous red stains in

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CAPSULE GEOLOGY

Dunedin Formation dolomite on Reef Mountain, approximately 4 kilometres southeast of Lady Laurier Lake. Although primary sulphides were not observed, the gossan samples gave geochemically anomalous lead, zinc and silver grades. A sample collected near the ridge top contained 0.0912 per cent lead, 0.16 per cent zinc and 3.5 grams per tonne silver (Assessment Report 4772).

BIBLIOGRAPHY

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EMPR ASS RPT 3976, *4772, 4873, 5306
GSC MAP 1634A
GSC MEM 425
Chevron File

DATE CODED: 1991/02/21
DATE REVISED: 1992/03/25

CODED BY: GKK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 004**

NATIONAL MINERAL INVENTORY: 094B2,A3 Au1

NAME(S): **PEACE RIVER**, GOLD BAR

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094B02E
BC MAP:

Open Pit

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 09 N
LONGITUDE: 122 34 08 W
ELEVATION: 500 Metres

NORTHING: 6228701
EASTING: 526747

LOCATION ACCURACY: Within 1 KM

COMMENTS: The location given is for the town of Gold Bar. Placers on the Peace River occur on map sheets 094B04 and 094A02 (National Topographic System Map 94B/2E, 1961).

COMMODITIES: Gold Platinum

MINERALS

SIGNIFICANT: Gold Platinum

COMMENTS: Fine, flat gold is commonly associated with minor platinum.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated Stratabound
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Reworked Glacial Gravel

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

Overlap Assemblage

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

Gold and platinum placer occurrences found in the Finlay, Parsnip and Peace rivers have been worked since the first discovery by Bill Cust in 1861. The placers generally occur in the top 1.5 to 3 metres of reworked glacial gravels deposited as bars and benches along streams and rivers. Normally worked by hand, these placer operations had limited success. The gold is fine and flat, and platinum, while common with high values reported locally, was considered unimportant in most of these placers.

The Peace River deposit comprises placers worked from the confluence of the Peace and Parsnip rivers, downstream to Fort St. John, excluding Branham Flats (094B 002). Between 1926 and 1945, 75,302 grams (2421 ounces) of gold were recovered from unspecified placers along the Peace River. Most of these placers are now covered by the flood waters of Williston Lake.

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EM GEOFILE 2000-2; 2000-5
EMPR AR 1924-A143; 1928-C182
EMPR BULL 21, p. 18; 28, p. 47
GSC MAP 1634A
GSC MEM 259, p. 143
GSC P 69-11, p. 90

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/25

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 005**

NATIONAL MINERAL INVENTORY: 094B13 Zn1

NAME(S): **ROBB LAKE**, WEBB, WEST WEBB,
EAST WEBB, LOWER SHOWING, CREEK,
WATERFALL, BARRIER

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094B13E 094B13W
BC MAP:
LATITUDE: 56 55 48 N
LONGITUDE: 123 42 47 W
ELEVATION: 1783 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6309820
EASTING: 456603

COMMENTS: Centre of Webb deposits, 1.75 kilometres north of Halfway River and 6.5 kilometres east of the summit of Mount Kenny, 180 kilometres north of Mackenzie (Assessment Report 5313).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite
ASSOCIATED: Dolomite Bitumen
ALTERATION: Dolomite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Breccia Disseminated
CLASSIFICATION: Hydrothermal Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Tabular
MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Undefined Group	Stone	
Silurian-Devonian	Undefined Group	Muncho-McConnell	

LITHOLOGY: Dolomite
Dolomite Breccia
Dolomitic Quartz Sandstone
Sandy Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: ROBB LAKE REPORT ON: Y
CATEGORY: Measured YEAR: 1984
QUANTITY: 6449481 Tonnes
COMMODITY: Zinc 7.1100 Per cent
COMMENTS: Grade is combined lead-zinc over a minimum mining width of 2.4 metres and a cutoff grade of 5 per cent.
REFERENCE: Consolidated Barrier Reef Resources Ltd. Circular, November 29, 1984.

CAPSULE GEOLOGY

Regionally, a Lower and Middle Devonian platformal carbonate sequence consists of two assemblages. The lower assemblage comprises the Upper Silurian(?) and Lower Devonian Muncho-McConnell and Lower and Middle(?) Devonian Stone formations, which consist almost entirely of dolomite with various admixtures of quartz sand or sandstones and argillaceous dolomite. The upper assemblage, comprising the Middle Devonian Dunedin Formation, consists of dolomites or variably dolomitized limestones. The overall character of the lower assemblage formations suggest that these represent low-energy, virtually completely dolomitized, high salinity lagoonal, intertidal, and supratidal carbonates. In contrast, the upper assemblage is of a more normal salinity, open-marine character, and appears to represent environments ranging from shallow-water lagoons of Bahama Banks type to high-energy, stromatoporoid, and coral-rich carbonates characteristic of bank margins. The Lower and Middle

CAPSULE GEOLOGY

Devonian sequence lies disconformably on Lower Silurian carbonates of the Nonda Formation and is overlain by basinal shales of the Upper Devonian-Lower Carboniferous Besa River Formation. All formations of both assemblages pass laterally into deeper water shales and argillaceous carbonates of the basinal Besa River Formation, which also includes lateral equivalents of Upper Devonian and Mississippian platform carbonates.

In the Robb Lake occurrence area, a narrow belt of resistant Silurian and Devonian carbonate rocks form parts of thrust panels and easterly verging folds along the western margin of a topographic depression floored by recessive shales of the Besa River Formation. Lead-zinc mineralization in dolomite breccias is distributed along the western flank of a large, southeasterly plunging anticline of Muncho-McConnell and Stone formations dolomites which makes up part of a broadly folded thrust panel. This panel has moved more than 4 kilometres upward and eastward over tightly folded Muncho-McConnell and Stone carbonates and Besa River shales. The mineralized panel has, in turn, been overridden by tightly folded shales and carbonates of Ordovician and Silurian age. A facies change from platform carbonate of the Lower Silurian Nonda Formation to slope breccias and shales occurs. The Muncho-McConnell and Stone dolomites extend westward over this facies change as a rigid unit sandwiched between Besa River shales above and Silurian slope breccias and shales below. This is a unique stratigraphic setting which may have a bearing on the origin of the mineralized breccias. The actual Muncho-McConnell, Stone formations facies change is not exposed, but it is clear that the lead-zinc showings are situated very close to the depositional edge of the carbonate platform.

The Muncho-McConnell, Stone formations interval is approximately 550 metres thick. The top of the interval is directly overlain by Besa River Formation shales and argillaceous carbonates. To the east, the undivided Muncho-McConnell, Stone interval is overlain, possibly disconformably, by a 60 metre thick interval of limestones, argillaceous limestones, and stromatoporoidal dolomites of the Dunedin Formation. These are in turn overlain conformably and gradationally by argillaceous carbonates and calcareous and noncalcareous shales of the Besa River Formation.

The Muncho-McConnell, Stone interval at Robb Lake contains more abundant white, sparry dolomite than the same stratigraphic interval elsewhere. White sparry dolomite fills fractures, forms the matrix of breccias, occurs as irregular patchy replacements of yellowish-brown host dolomite, lines or fills open spaces, and forms peculiar and striped zebra-like anastomosing, and irregular fabrics on a scale and abundance unique to this locality. Any part of the interval may be brecciated, with mosaic and rubble breccias most abundant. Spectacular mosaic and rubble breccias are developed in the upper half of the interval.

Breccias occur throughout the undivided Muncho-McConnell, Stone interval at Robb Lake, but appear to be best developed in the middle and upper parts of this interval. Individual breccia bodies have variable dimensions; some are broadly stratigraphic whereas others are strongly crosscutting. Commonly, they comprise angular dolomite fragments with sharp boundaries set in a matrix of white, coarsely crystalline dolomite cement. Within the same breccia zone, however, angular crackle, mosaic, and rubble fabrics may grade into distinct patchy breccias in which fragments have corroded(?) and sutured outlines, are partly recrystallized, and are set in a fine carbonaceous matrix (bitumen is common). Every gradation exists between the two textural types. Fragment size and composition vary; 1-5 centimetres is a common range but clasts as small as a millimetre to several metres in breadth occur. Thicknesses of the breccia zones normally range from a few centimetres to tens of metres and may rarely exceed 45 metres. Lateral dimensions in the order of 304 metres are common.

Sulphide mineralization at Robb Lake is largely confined to dolomite breccias and comprises predominant pale to medium brown sphalerite with lesser galena and minor pyrite. The sulphides occur as rims around dolomite fragments and as large crystals and crystal aggregates with the sparry filling. Pyrite, where present, occurs as thin, fine-grained fragment coatings. The dolomite breccia zones are in places traversed by essentially vertical, north striking fractures of little or no displacement; some of the better grade material appears to occur near these fractures where they intersect the breccia zones.

Origin of the breccias at Robb Lake is undetermined. An alternative mechanism to a solution collapse origin is hydraulic fracturing: the fracture of rocks through application of excess fluid (hydrostatic) pressure. In simplest terms, hydrostatic pressure has the effect of reducing rock strength to the point of brittle failure

CAPSULE GEOLOGY

without any increase in applied stress. At Robb Lake, hydraulic fracturing may be a result of high pore pressures generated by dewatering of the fine clastic facies that envelope the host dolomites (Property File - Canadian Journal of Earth Sciences, November 1978).

Measured geological reserves over a minimum mining width of 2.4 metres are 6,449,481 tonnes grading 7.11 per cent combined lead-zinc at a 5 per cent cutoff grade; or 10,794,490 tonnes grading 6.6 per cent combined lead-zinc at a 3.5 per cent cutoff grade; or 20,137,620 tonnes grading 5 per cent combined lead-zinc at a 2 per cent cutoff grade (Consolidated Barrier Reef Resources Ltd., Rights Offering Circular, November 29, 1984). The reserves are combined from three separate deposits: the Lower Showing, East Webb, and West Webb.

Recent interpretation (Bill McMillan, 1998) suggests mineralization appears to be hydrothermal and stratabound. NATMAP crews are investigating.

A summary in Fieldwork 1998 (pages 89-101) suggests that the Robb is possibly a MVT deposit. They note that there is a textural and mineralogical zonation in the Robb Lake system. Bedding parallel, rock matrix breccia, with adjacent crackle and masaic breccia, in the upper 200 metres of the lower unit of Siluro-Devonian Muncho-McConnell Formation, is particularly rich in sphalerite, whereas, separated by 70 metres or so, in the lower 130 metres of the upper Siluro-Devonian Muncho-McConnell Formation, in cross cutting, crackle breccias and adjacent dolomite veins and quartz stockworks, galena seems to predominate.

In 1999, Doublestar Resources Inc. plans to acquire the property from Falconbridge Limited.

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EMPR EXPL 1975-E156; 1980-414,415; 1981-26; 1982-321,322
EMPR GEM *1972-463-476; 1973-389; 1974-289
EMPR OF 1991-1; 2000-3, 2000-9
EMPR P 1991-4, pp. 71-88
EMPR PF (A Review of Mineral Prospects and Exploration Projects, Barrier Reef Resources Ltd., April 1977; Claim maps, photograph; Doublestar Resources Ltd., Annual Report, December 1999)
EMR MIN BULL MR 223 B.C. 258
EMR MP CORPFILE (Barrier Reef Resources Ltd.; Ecstall Mining Limited)
GSC MAP 37-1961; 22-1963; 1232A; 1634A
GSC MEM 425
GSC OF 536
GSC P 69-11; 73-1A, p. 129; 74-1, Part A, pp. 327-331
CJES *Vol.15, No.11, Nov. 1978, Carbonate-hosted lead-zinc occurrences in northeastern British Columbia with emphasis on the Robb Lake deposit, R. MacQueen and R. Thompson, pp. 1737-1762
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Chevron File
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1990/08/10

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 006**

NATIONAL MINERAL INVENTORY: 094B5,4 Zn1

NAME(S): **WL**, EVIL, ZRR

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B05E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 16 26 N
LONGITUDE: 123 38 15 W
ELEVATION: 1000 Metres

NORTHING: 6236746
EASTING: 460522

LOCATION ACCURACY: Within 500M

COMMENTS: Location of sample 2-5 on Gossan No. 2 (Assessment Report 5246)

COMMODITIES: Zinc Lead Copper

MINERALS

SIGNIFICANT: Pyrite Marcasite Chalcopyrite
COMMENTS: Pyrite/marcasite pods and veins and rare chalcopyrite.
ASSOCIATED: Dolomite Calcite
COMMENTS: Secondary fracture filling white dolomite/calcite.
ALTERATION: Limonite
COMMENTS: Limonite gossans.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Vein Disseminated
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn
DIMENSION: 900 x 3 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions of the southern of three gossans.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Ordovician	Undefined Group	Skoki	

LITHOLOGY: Dolomite
Shale
Dolomite Breccia
Limonite Gossan

HOSTROCK COMMENTS: Gossans occur in Middle Ordovician black and dark grey dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: TRENCH REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1974
SAMPLE TYPE:	Chip		
COMMODITY		GRADE	
Copper		0.0024	Per cent
Lead		0.1470	Per cent
Zinc		0.0216	Per cent

COMMENTS: A 3-metre chip from trench 3-18.
REFERENCE: Assessment Report 5246

CAPSULE GEOLOGY

The WL occurrence, located near the head waters of Wicked River, 110 kilometres north of the town of MacKenzie, occurs in Paleozoic sediments of the Ancestral North America terrane.

The Wicked Lake area, situated on the dome-like south plunging nose of the Bernard anticline, is bound to the west by the Mount Burden thrust fault and to the east by the Nabesche River fault. Hanging wall strata west of the Mount Burden fault include Ordovician to Silurian Road River Group calcareous shale, limestone and siltstone, Middle Ordovician Skoki Formation dolomite, limestone, siltstone and volcanics, and Cambro-Ordovician Kechika Group siltstone, shale and limestone. Footwall strata east of the thrust include Devonian and Lower Carboniferous Besa River Formation shale and limestone, Middle Devonian Dunedin Formation limestone and dolomite, Middle and Lower Devonian Stone Formation dolomite and sandstone, Silurian and Devonian Muncho-McConnell Formation dolomite,

CAPSULE GEOLOGY

and Silurian Nonda Formation dolomite and limestone.
Three limonitic gossans, along the base of the Mount Burden thrust fault hosted within Skoki dolostone, comprise the WL occurrence. The gossans, limonitic pyritic mats overlying massive pyrite/marcasite pods, veins and disseminations, are up to 900 metres in length and 2 to 3 metres thick, locally. Lead, zinc and copper anomalies are coincident with the gossans, however, trenching failed to uncover any significant lead or zinc sulphides and only rare chalcopyrite was noted. A grab sample from the second gossan contained 0.1 per cent copper, 0.114 per cent lead and 0.0013 per cent zinc. A three-metre chip sample from trench 3-18 contained 0.0024 per cent copper, 0.1470 per cent lead and 0.0216 per cent zinc (Assessment Report 5246).

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EMPR GEM 1972, p. 461; 1974, p. 288; 1977, p. E210; 1980, p. 413
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GSC MAP 1634A
GSC OF 536
GSC P 69-11

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/13

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

Nonda Formation with the Devonian and Carboniferous Besa River Formation.

The Poco Main, Poco North, West Rusty and East Rusty zones comprise the Poco occurrence, a widespread lead and zinc showing. Galena occurs as veins and is disseminated with sphalerite in Devonian reefal dolomite breccias. Hydrozincite is common in the dolomites. A continuous chip sample from the West Rusty zone averaged 8.5 per cent zinc and 3.2 per cent lead over 12.5 metres; a three-metre chip from a trench on the Poco Main showing assayed 13.8 per cent zinc and 5.5 per cent lead (Assessment Report 5745). A five hole drill program in 1975 failed to intersect significant grades.

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GSC MEM 425
GSC MAP 1634A
GSC P 69-11

Manns, F.T. (1981): Stratigraphic Aspects of the Silurian-Devonian Sequence Hosting Zinc and Lead Mineralization Near Robb Lake, Northeastern British Columbia, Unpublished Doctoral Dissertation, University of Toronto, p. 252

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/26

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 008**

NATIONAL MINERAL INVENTORY: 094B3 Zn1

NAME(S): **CORAL**, HOUND DOG CREEK, SOUTH POCO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B03W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 56 09 39 N
LONGITUDE: 123 23 09 W
ELEVATION: 1460 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6224047
EASTING: 476037

LOCATION ACCURACY: Within 500M

COMMENTS: Trench across Hound Dog Creek (Assessment Report 15040).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: Red and yellow sphalerite with minor galena.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia Stratabound
CLASSIFICATION: Replacement
TYPE: E12 Mississippi Valley-type Pb-Zn
COMMENTS: Disseminated sphalerite and galena are hosted in an irregular zone of dolomite breccia with a 400 metre diameter surface expression.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Undefined Group	Stone	
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Fossiliferous Dolomite Breccia

HOSTROCK COMMENTS: A dolomite breccia occurs at the base of the Dunedin or the top of the Stone formations.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Ancestral North American Lower Paleozoic platformal carbonates.

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Chip
COMMODITY GRADE
Lead 1.4500 Per cent
Zinc 3.4700 Per cent

COMMENTS: Weathered rubble from 1-metre trench beside Hound Dog Creek.
REFERENCE: Assessment Report 13724.

CAPSULE GEOLOGY

The Coral occurrence, located 3 kilometres southeast of Mount Burden and 100 kilometres north of the town of MacKenzie, occurs in Paleozoic Ancestral North America terrane platformal carbonates. Ordovician Skoki Formation, Silurian Nonda Formation, Silurian to Devonian Muncho-McConnell Formation and Lower and Middle Devonian Stone Formation and Middle Devonian Dunedin Formation carbonates, overlain by Devonian and Carboniferous Besa River Formation limy shale and Lower Carboniferous Prophet Formation cherty dolomite, are exposed in a folded thrust plate east of Mount Burden. West of Mount Burden, Cambro-Ordovician Kechika Group clastics and carbonates and Skoki and Nonda formation carbonates comprise the Mount Burden anticlinorium.
Red and yellow sphalerite with minor galena disseminated in Dunedin or (upper) Stone formation dolomite breccia comprise the showing. The sphalerite and galena is commonly disseminated in dolomite fragments and in a white sparry dolomite matrix. The mineralization is hosted in an irregular zone of dolomite breccia with a 400-metre diameter surface expression. A sample of weathered rubble from a 1-metre trench excavated in 1984 assayed 1.45 per cent lead and 3.47 per cent zinc (Assessment Report 13724). The dolomite breccia is probably the same unit that hosts the Coral #2 occurrence

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RUN TIME: 11:51:27

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REPORT: RGEN0100

CAPSULE GEOLOGY

(094B 021) a few kilometres to the west.

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DATE CODED: 1985/07/24
DATE REVISED: 1991/02/26

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 009**

NATIONAL MINERAL INVENTORY: 094B6 Zn3

NAME(S): **NABE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 17 17 N
LONGITUDE: 123 24 26 W
ELEVATION: 1676 Metres

NORTHING: 6238215
EASTING: 474792

LOCATION ACCURACY: Within 1 KM

COMMENTS: Near the centre of the Nabe property at the given elevation of mineralization (Geology, Exploration and Mining 1972, page 462).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia
CLASSIFICATION: Replacement
COMMENTS: Disseminated sphalerite is hosted in southeast dipping carbonates at the nose of the Bernard anticline.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Unnamed/Unknown Group	Dunedin	

LITHOLOGY: Medium Grained Limestone
Medium Grained Dolomite
Coarse Grained Black Dolomite
Dolomite Breccia

HOSTROCK COMMENTS: Reefal and brecciated Dunedin limestone and dolomite.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Ancestral North American Paleozoic platformal carbonates.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Nabe occurrence, located between the head waters of the Nabesche and West Nabesche rivers, 15 kilometres north of Mount Burden and 110 kilometres north of the town of MacKenzie, occurs in Paleozoic carbonates of the Ancestral North America terrane.

Silurian Nonda Formation, Silurian and Devonian Muncho-McConnell Formation and Lower and Middle Devonian Stone Formation and Middle Devonian Dunedin Formation limestones and dolomites, overlain by Devonian and Carboniferous Besa River Formation shale, comprise the southeast limb and south plunging nose of the Bernard anticline.

Following the Robb Lake discovery (094B 005), exploration in 1972 and 1973 led to the discovery of sphalerite disseminated in Dunedin Formation dolomite, located at the nose of the Bernard anticline.

No assessment work was filed and consequently an accurate description of the showing and its location is not possible. The Nabe occurrence is probably similar to other zinc and lead showings in the area including the Dev (094B 011).

BIBLIOGRAPHY

EMPR GEM *1972-462; *1973-385
GSC MEM 425
GSC MAP 1634A
GSC P 74-1, Part A, p. 331

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/15

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 010**

NATIONAL MINERAL INVENTORY: 094B6 Zn1

NAME(S): **WIND**, BLOW

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 16 12 N
LONGITUDE: 123 26 30 W
ELEVATION: 1400 Metres

NORTHING: 6236218
EASTING: 472647

LOCATION ACCURACY: Within 1 KM

COMMENTS: Centre of Wind claim block (Geology, Exploration and Mining 1973, page 384).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia
CLASSIFICATION: Replacement
COMMENTS: Disseminated sphalerite and galena are hosted in southeast dipping carbonates at the nose of Bernard anticline.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Unnamed/Unknown Group	Dunedin	

LITHOLOGY: Medium Grained Limestone
Coarse Grained Dolomite
Dolomite Breccia

HOSTROCK COMMENTS: Host rock is brecciated reefal limestone and dolomite.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Wind occurrence, located between the head waters of the Nabesche and West Nabesche rivers, 10 kilometres north of Mount Burden and 105 kilometres north of the town of Mackenzie, occurs in Paleozoic platformal carbonates of the Ancestral North America terrane.

Silurian Nonda Formation, Silurian and Devonian Muncho-McConnell Formation and Lower and Middle Devonian Stone Formation and Middle Devonian Dunedin Formation dolomites and limestones, overlain by Devonian and Carboniferous Besa River Formation shale, comprise the southeast limb and south plunging nose of the Bernard anticline.

Following the Robb Lake discovery (094B 005), exploration in 1972 and 1973 led to the discovery of sphalerite with minor galena disseminated in Middle Devonian limestone, dolomite and dolomite breccia of the Dunedin Formation (correlative with the Pine Point and Slave Point formations). No assessment work was filed and consequently an accurate description of the showing and its location is not possible. The Wind occurrence is probably similar to other zinc-lead replacement showings in the area including the Dev (094B 011).

BIBLIOGRAPHY

EMPR GEM 1972-462; *1973-384
GSC MEM 425
GSC MAP 1634A
GSC P 74-1 Pt A, p. 331

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/15

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 011**

NATIONAL MINERAL INVENTORY: 094B6 Zn2

NAME(S): **DEV**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 18 45 N
LONGITUDE: 123 23 44 W
ELEVATION: 1520 Metres

NORTHING: 6240931
EASTING: 475530

LOCATION ACCURACY: Within 500M

COMMENTS: Trench at the northeast corner of the Dev claims (Assessment Report 4791).

COMMODITIES: Zinc Lead Silver Copper Cadmium

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: Yellow finely disseminated sphalerite and minor galena.

ASSOCIATED: Dolomite Calcite Quartz

COMMENTS: Fracture filling white dolomite/calcite with minor quartz in vugs.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia
CLASSIFICATION: Replacement

TYPE: E12 Mississippi Valley-type Pb-Zn

DIMENSION: 180 x 120 Metres STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: South and east dipping carbonates at the nose of the Bernard anticline. Disseminated galena occurs in a 180 by 120 metre area.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Devonian
Devonian

GROUP

Unnamed/Unknown Group
Unnamed/Unknown Group

FORMATION

Dunedin
Stone

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Medium Grained Fossiliferous Limestone
Coarse Grained Dolomite
Dolomite Breccia
Mudstone

HOSTROCK COMMENTS: Brecciated reefal Dunedin limestone and dolomite with secondary fracture filling white dolomite.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Ancestral North American Paleozoic platformal carbonates.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	1.5000	Grams per tonne
Cadmium	0.0760	Per cent
Copper	0.0272	Per cent
Lead	0.0030	Per cent
Zinc	1.0000	Per cent

COMMENTS: Sample from northeast corner of Dev claims.

REFERENCE: Assessment Report 4791.

CAPSULE GEOLOGY

The Dev occurrence, located between the head waters of the Nabesche and West Nabesche rivers, 12 kilometres north of Mount Burden and 110 kilometres north of the town of MacKenzie, is hosted in Paleozoic platformal carbonates of the Ancestral North America terrane.

Silurian Nonda Formation, Silurian-Devonian Muncho-McConnell Formation and Lower and Middle Devonian Stone Formation and Middle Devonian Dunedin Formation dolomites and limestones, overlain by Devonian and Carboniferous Besa Formation shale, comprise the southeast limb and south plunging nose of the Bernard anticline.

Following the Robb Lake discovery (094B 005) in 1970, regional

CAPSULE GEOLOGY

silt sampling identified numerous lead-zinc anomalies within platform carbonates. Follow-up work in 1973 led to the discovery of two small sulphide showings on the Dev claims. A sphalerite showing was exposed in a small trench on the northeast corner of the claim block. Pale yellow sphalerite occurs very finely disseminated in calcite/white dolomite veins and the matrix of a Dunedin Formation limestone bed. The second showing, 750 metres southwest of the trench, occurs at the base of the Dunedin possibly in Stone Formation (upper unit) dolomite/mudstone. Galena, associated with white dolomite and minor quartz, occurs as the matrix of a solution breccia, occasionally replacing the host, over an area 120 by 180 metres. Grab samples from the first showing assayed greater than 1 per cent zinc and from the second greater than 1 per cent zinc and greater than 1 per cent lead. A grab sample from the northeast corner of the claims assayed 1.5 grams per tonne silver, 0.0272 per cent copper, 0.0030 per cent lead, 1 per cent zinc and 0.0760 per cent cadmium (Assessment Report 4791).

BIBLIOGRAPHY

EMPR GEM 1973-385
EMPR ASS RPT *4791
GSC MEM 425
MAP 1634A

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/12

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 012**

NATIONAL MINERAL INVENTORY: 094B13 Zn2

NAME(S): **RON**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B13E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 58 36 N
LONGITUDE: 123 42 24 W
ELEVATION: 1525 Metres

NORTHING: 6315011
EASTING: 457045

LOCATION ACCURACY: Within 500M

COMMENTS: Rough location of Ron 19 and 20 claims where 4 diamond-drill holes were put down in 1973 (Geology and Exploration in B.C. 1973, page 388; Assessment Report 4196, Figure 2).

COMMODITIES: Zinc Lead Iron

MINERALS

SIGNIFICANT: Sphalerite Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Stratabound
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Undefined Group	Stone	
Silurian-Devonian	Undefined Group	Muncho-McConnell	

LITHOLOGY: Brecciated Dolomite
Dolomite Breccia
Sandy Dolomite
Argillaceous Dolomite
Dolomitic Quartz Sandstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Ron occurrence consists of finely crystalline sphalerite and slightly coarser galena occurring in a brecciated horizon of medium to thick-bedded dolomite with argillaceous and sandy dolomite interbeds.

Regionally, a Lower and Middle Devonian platformal carbonate sequence consists of two assemblages. The lower assemblage comprises the Upper Silurian(?) and Lower Devonian Muncho-McConnell and Lower and Middle(?) Devonian Stone formations, which consist almost entirely of dolomite with various admixtures of quartz sand or sandstones and argillaceous dolomite. The upper assemblage, comprising the Middle Devonian Dunedin Formation, consists of dolomites or variably dolomitized limestones. The Lower and Middle Devonian sequence lies disconformably on Lower Silurian carbonates of the Nonda Formation and is overlain by basinal shales of the Upper Devonian-Lower Carboniferous Besa River Formation.

It is assumed that the host stratigraphy of the Ron occurrence is similar to the Robb Lake deposit (094B 005), located about 7 kilometres to the south, where lead-zinc mineralization in dolomite breccias is distributed along the western flank of a large, southeast plunging anticline made up of Muncho-McConnell and Stone formations dolomites (the Ron showing, however, appears to be on the eastern flank of the anticline). The lead-zinc showings are situated very close to the depositional edge of the carbonate platform.

BIBLIOGRAPHY

EMPR ASS RPT *4196
EMPR GEM *1973-388
EMPR OF 2000-9
EMPR PF (*Mineral Deposit Inventory card, 1974 (with information derived from a 1973 exploration form))
GSC MAP 1634A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
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PAGE: 30
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MEM 425

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/02

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAST MOUNT GETHING**

MINING DIVISION: Liard

STATUS: Developed Prospect

REGIONS: British Columbia

NTS MAP: 094B01W

BC MAP:

LATITUDE: 56 02 00 N

LONGITUDE: 122 20 06 W

ELEVATION: Metres

LOCATION ACCURACY: Within 1 KM

COMMENTS: The coordinates are for the centre of the property (Coal Assessment Report 520).

UTM ZONE: 10 (NAD 83)

NORTHING: 6209989

EASTING: 541439

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal

MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Fossil Fuel Sedimentary

TYPE: A04 Bituminous coal

SHAPE: Irregular

COMMENTS: Property is underlain by a broad north trending, south-plunging syncline.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Lower Cretaceous

GROUP

Bullhead

FORMATION

Gething

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Sandstone
Siltstone
Shale
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Overlap Assemblage

METAMORPHIC TYPE: Regional

COMMENTS: Low to high volatile bituminous.

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

RELATIONSHIP: Post-mineralization

GRADE:

CAPSULE GEOLOGY

Over 80 coal seams, varying from 1 centimetre to 3.8 metres thick, including splits, occur in the greater than 610 metre thick Lower Cretaceous Gething Formation, Bullhead Group interbedded with sandstone, shale, and siltstone. The strata were deposited in an aggrading flood plain environment, with the coals forming in abandoned river channels, river floodplains, and in more deltaic settings.

The structure consists of a broad north trending, south plunging syncline which lies towards the eastern boundary of the property. The central part of the property is underlain by relatively flat lying Gething Formation rock and is flanked by asymmetric anticlines to the west and east which are probably related to north trending, west dipping thrust faults at depth.

Three seams, the Milligan, averaging 0.91 metres thick and varying from 0.45 to 31.3 metres, the Louise, averaging 1.08 metres thick and varying from 0.55 to 1.65 metres and the Riverside, averaging 1.78 metres thick and varying from 0.6 to 3.15 metres, are laterally continuous and thought to be of economic interest.

The Milligan seam is medium volatile bituminous thermal grade coal with a sulphur content varying from 0.76 to 1.30 per cent (averaging 0.94 per cent) and an ash content varying from 3.65 to 17.94 per cent (averaging 10.25 per cent). Thickness decreases away from Drill Hole 77-10 and sulphur increases away from Drill Holes 72-2, 75-5, and 75-6. Ash content trend is similar to the latter and may be related to a more marine influenced depositional environment.

The Louise seam is medium to high volatile bituminous coal, thinning from Drill Hole 72-1 to the southeast. Sulphur content is low, varying from 0.54 to 0.84 per cent (averaging 0.68 per cent) and ash content varies from 5.31 to 29.43 per cent (averaging 18.46 per cent).

The Riverside seam is medium to low volatile bituminous with

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CAPSULE GEOLOGY

sulphur values ranging from 0.36 to 0.80 per cent averaging 0.56 per cent) and ash content ranging from 6.70 to 29.28 per cent (averaging 16.02 per cent). Thickness decreases away from Drill Hole 77-7. This seam contains numerous splits.

BIBLIOGRAPHY

EMPR COAL ASS RPT *520
GSC MAP 1634A
GSC MEM 425

DATE CODED: 1985/07/24
DATE REVISED: 1986/02/12

CODED BY: GSB
REVISED BY: EVFK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 014**

NATIONAL MINERAL INVENTORY: 094B12 Zn1

NAME(S): **MARINI 1, ACE, LINDA,
LAKE, HORN, REEF**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B12E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 56 43 00 N
LONGITUDE: 123 33 12 W
ELEVATION: 1333 Metres

UTM ZONE: 10 (NAD 83)

LOCATION ACCURACY: Within 1 KM

NORTHING: 6285984
EASTING: 466131

COMMENTS: Outcrop on ridge 2 kilometres north of Lady Laurier Lake (Assessment Report 5306).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
ASSOCIATED: Dolomite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn
COMMENTS: Disseminated sphalerite on fractures in calcareous shale.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Silurian-Devonian	Road River	Undefined Formation	

LITHOLOGY: Calcareous Shale
Calcareous Quartzite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Ancestral North American Paleozoic platformal carbonates and clastics.

CAPSULE GEOLOGY

The Marini 1 showing, located near the head waters of the Graham River, approximately 160 kilometres north of the town of MacKenzie, occurs in Paleozoic platformal carbonates of the Ancestral North American terrane.

Silurian Nonda Formation, Silurian and Devonian Muncho-McConnell Formation and Lower and Middle Devonian Stone Formation and Middle Dunedin Formation carbonate rocks, overlain by Devonian and Carboniferous Besa River Formation shales, lie on the northeast flank and core of the Bernard anticline, a prominent north trending structure. The north end of the Bernard anticline terminates in a small dome overlain by the Middle Ordovician to Lower Devonian Road River Group.

Following the Robb Lake discovery (094B 005) in 1970, a regional silt sampling program identified numerous lead-zinc anomalies within the platformal carbonates. Follow up soil sampling and prospecting led to the discovery of the Marini 1 showing, 2 kilometres north of Lady Laurier Lake. Fractures containing minor sphalerite, crosscut Upper Silurian or Lower Devonian calcareous quartzite and shale within a thrust slice of the Road River Group. This showing lies below the Dunedin Formation and has had limited work performed on it. No significant assays have been reported.

BIBLIOGRAPHY

EMPR GEM 1973-385; 1974-289; 1975-E156
EMPR ASS RPT 4772, *5306
GSC MEM 425
GSC MAP 1634A

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/15

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

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CAPSULE GEOLOGY

reddish brown sphalerite and minor galena, limonite and marcasite occur in coarse-grained brecciated Dunedin Formation dolomite on the steep dipping eastern flank of the Bernard anticline. A grab sample from the Perkins Main contains 0.05 per cent lead and 26.1 per cent zinc (Assessment Report 5468). However, a drill hole failed to intersect any significant grades. The Northeast Perkins showing, 900 metres north west of the Perkins main, consists of talus boulders "rich in sphalerite".

BIBLIOGRAPHY

EMPR GEM 1972-462; 1973-387; 1975-E155
EMPR ASS RPT 4142, 4873, *5468
GSC MEM 425
GSC MAP 1634A
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/20

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **FARRELL CREEK**, FARRELL

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094B01E 094B08E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 15 00 N
LONGITUDE: 122 12 05 W
ELEVATION: Metres

NORTHING: 6234191
EASTING: 549485

LOCATION ACCURACY: Within 1 KM

COMMENTS: Latitude and longitude from approximate centre of property (Coal Assessment Report 527).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal

MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Fossil Fuel Sedimentary

TYPE: A04 Bituminous coal

SHAPE: Irregular

MODIFIER: Folded Faulted

COMMENTS: Northwest trending structures are cut by some northwest trending thrust faults.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Shale
Silty Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

TERRANE: Overlap Assemblage

METAMORPHIC TYPE: Regional

RELATIONSHIP: Post-mineralization

GRADE:

COMMENTS: Coal rank is low to medium volatile bituminous.

CAPSULE GEOLOGY

Numerous thin coal seams occur in the Lower Cretaceous Gething Formation, Bullhead Group interbedded with sandstone, siltstone, shale, and silty shale. Eight thicker seams varying from 0.3 to 1.2 metres thick are dispersed at intervals of 15.2 to 45.7 metres. The coal rank is low to medium volatile bituminous.

The structure consists of several northwest trending folds, the Ruddy anticline is asymmetrical and plunges northward, the Farrell syncline dips 4 to 6 degrees over a 2 mile span in the centre and the Farrell anticline is narrow, concentric with a low amplitude. The latter is cut on its east flank by a northwest trending, southwest dipping thrust fault similar to the thrust fault on the west side of the property, east front of Butler Ridge.

BIBLIOGRAPHY

EMPR COAL ASS RPT *527
GSC MEM 425
GSC MAP 1634A

DATE CODED: 1985/07/24
DATE REVISED: 1986/02/12

CODED BY: GSB
REVISED BY: EVFK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 017**

NATIONAL MINERAL INVENTORY: 094B5,4 Zn1

NAME(S): **ZRR**, WICK, WL

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 14 51 N
LONGITUDE: 123 37 43 W
ELEVATION: 1550 Metres

NORTHING: 6233804
EASTING: 461046

LOCATION ACCURACY: Within 500M

COMMENTS: Location of chip sample 140A (Assessment Report 5246).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Smithsonite Sphalerite
COMMENTS: Zinc oxides on fracture surfaces, rare sphalerite, galena in float only.

ASSOCIATED: Dolomite Quartz
COMMENTS: Common secondary white dolomite, quartz lines vugs.

ALTERATION: Hemimorphite Hydrozincite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Replacement Residual
TYPE: E12 Mississippi Valley-type Pb-Zn
COMMENTS: Devonian carbonates on southwest dipping limb of Bernard anticline.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Fine Grained Fossiliferous Limestone
Dolomite
Travertine

HOSTROCK COMMENTS: Reefal, brecciated and bedded Dunedin limestone and dolomite.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist

COMMENTS: Ancestral North American Paleozoic platformal carbonates.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1975

SAMPLE TYPE: Chip

COMMODITY

GRADE

Zinc

3.1000

Per cent

COMMENTS: From a 4-metre chip sample of brecciated dolomite.

REFERENCE: Assessment Report 5246.

CAPSULE GEOLOGY

The ZRR occurrence, located near the head waters of Wicked River, 110 kilometres north of the town of MacKenzie and 75 kilometres south of Robb Lake, occurs in Paleozoic sediments of the Ancestral North America terrane.

The Wicked Lake area is situated on the dome-like, south plunging nose of the Bernard anticline, bound to the west by the Mount Burden thrust fault and bound to the east by the Nabesche River fault. Hanging wall strata west of the Mount Burden fault include Ordovician to Devonian Road River Group calcareous shale, limestone and siltstone, Ordovician Skoki Formation dolostone, limestone, siltstone and volcanics and Cambro-Ordovician Kechika Group siltstone, shale and limestone. Footwall strata, east of the thrust, include Devonian and Carboniferous Besa River Formation shale and limestone, Middle Devonian Dunedin Formation limestone and dolostone, Middle and Lower Devonian Stone Formation dolostone and sandstone and Silurian and Devonian Muncho-McConnell Formation dolostone and Silurian Nonda Formation dolostone and limestone.

CAPSULE GEOLOGY

The ZRR showing consists of smithsonite/hemimorphite coating fractures and sphalerite disseminated in Dunedin limestone east of the Mount Burden thrust fault. Trenching exposed pervasive zinc oxides in travertine-like limestone to a depth of 0.5 metre. Although soil samples indicate a lead anomaly, galena has only been found as float. The best assay, 3.1 per cent zinc was obtained from a 4-metre chip sample of brecciated Dunedin dolomite containing finely disseminated sphalerite (Assessment Report 5246). A piece of float graded greater than 50 per cent zinc.

BIBLIOGRAPHY

EMPR GEM 1972-461; 1974-288; 1977-E210
EMPR ASS RPT 4141, *5246, 6542, 8667
GSC MEM 425
GSC MAP 1634A
GSC OF 536
GSC P 69-11

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/13

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **OSPIKA**, WITCH

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 21 05 N
LONGITUDE: 123 46 01 W
ELEVATION: 1675 Metres

NORTHING: 6245453
EASTING: 452603

LOCATION ACCURACY: Within 1 KM

COMMENTS: Hydrozincite-bearing dolomite breccia outcrops at head of Butt Creek (Assessment Report 8594).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Hydrozincite Pyrite

COMMENTS: Hydrozincite coats fracture surfaces.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia

CLASSIFICATION: Replacement Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Lower Ordovician
Cambrian-Ordovician

GROUP

Undefined Group
Kechika

FORMATION

Skoki
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dolomite Breccia
Bedded Dolomite
Limestone

HOSTROCK COMMENTS: Kechika Group carbonates are thrust over Skoki Formation carbonates.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Ospika occurrence lies 11 kilometres east of the junction of the Ospika and Gauveau rivers, 115 kilometres north of the town of MacKenzie.

Cambrian to Ordovician Kechika Group dolomite, limestone and limy phyllite and Lower Ordovician Skoki Formation dolomite, limestone and siltstone comprise a Lower Paleozoic carbonate package. The Kechika Group is exposed in the core of an overturned anticline and is thrust over the Skoki Formation from the west.

In 1975, minor hydrozincite was identified on fractures in a dolomite breccia at the head of Butt Creek. In 1980, an outcrop of silicified dolomite with disseminated pyrite was discovered in the bed of Butt Creek.

BIBLIOGRAPHY

EMPR ASS RPT *8594
EMPR GEM 1975-E154
EMPR EXPL *1980 p. 414
GSC MAP 1634A
GSC MEM 425
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/21

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **CYN**, NABESCHE

MINING DIVISION: Omineca
Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6235095
EASTING: 465481

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B05E
BC MAP:

LATITUDE: 56 15 34 N
LONGITUDE: 123 33 26 W
ELEVATION: 1670 Metres

LOCATION ACCURACY: Within 500M
COMMENTS: Outcrop on West Grid (Assessment Report 5470).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite
COMMENTS: Disseminated sphalerite; lead from assay only.

ASSOCIATED: Dolomite Calcite
COMMENTS: Fracture-filled sparry white dolomite.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein Disseminated
CLASSIFICATION: Replacement
COMMENTS: Sphalerite occurs in carbonates on the south plunging nose of the Bernard anticline.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Devonian-Mississipp.	Unnamed/Unknown Group	Besa River	

LITHOLOGY: Fossiliferous Dolomite
Dolomitic Breccia
Shaly Limestone

HOSTROCK COMMENTS: White sparry dolomite fills fractures in brecciated Dunedin carbonate.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE:

COMMENTS: Ancestral North America Paleozoic platformal carbonates.

INVENTORY

ORE ZONE: WEST

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1975

SAMPLE TYPE: Chip

COMMODITY GRADE

Lead 2.1700 Per cent

Zinc 1.0370 Per cent

COMMENTS: Chip sample from West grid containing disseminated sphalerite associated with fracture-filled white sparry dolomite.

REFERENCE: Assessment Report 5470.

CAPSULE GEOLOGY

The Cyn occurrence, located near the head waters of the West Nabesche River and 110 kilometres north of the town of MacKenzie, occurs in Paleozoic platformal carbonates of the Ancestral North America terrane.

Silurian Nonda Formation, Silurian and Devonian Muncho-McConnell Formation and Lower and Middle Devonian Stone Formation and Middle Devonian Dunedin Formation limestones and dolomites, overlain by Devonian and Lower Carboniferous Besa River Formation shale, comprise the south plunging nose of the Bernard anticline. Ordovician Skoki Formation and Upper Cambrian and Lower Ordovician Kechika Group carbonate rocks and siliciclastics are in fault contact with the Devonian carbonates.

Following the Robb Lake discovery (094B 005) in 1970, regional silt sampling identified numerous zinc and lead anomalies in the Paleozoic platformal carbonates. On the east grid of the Cyn claims, Besa River Formation shaly limestone hosts minor disseminated sphalerite associated with calcite veins and on the west grid,

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RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 41
REPORT: RGEN0100

CAPSULE GEOLOGY

Dunedin Formation dolomite hosts several small sphalerite showings along a faulted and brecciated zone. Sphalerite is finely disseminated and is associated with fracture-filled white sparry dolomite. A chip sample from the West grid assayed 1.037 per cent zinc and 2.17 per cent lead (Assessment Report 5470).

BIBLIOGRAPHY

EMPR GEM 1972-462; 1973-384; 1975-E155
EMPR ASS RPT 4204, 4874, *5470
GSC BULL 186
GSC MEM 425
GSC MAP 1634A
GSC P 75-1, Pt A, pp. 577-585

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/10

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 020**

NATIONAL MINERAL INVENTORY:

NAME(S): **HALFWAY RIVER**, OSPIKA RIVER, WILLISTON LAKE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B12E 094B03W 094B04E 094B05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 30 42 N
LONGITUDE: 123 33 47 W

NORTHING: 6263171
EASTING: 465349

ELEVATION: 1829 Metres

LOCATION ACCURACY: Within 5 KM

COMMENTS: Location centered on 11-kilometre long dolomite band, 5 to 6 kilometres east of the Ospika River.

COMMODITIES: Dolomite

MINERALS

SIGNIFICANT: Dolomite
ASSOCIATED: Calcite
MINERALIZATION AGE: Silurian-Devonian

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Outcrops as a series of parallel bands trending north-northwest.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Undefined Group	Stone	
Silurian-Devonian	Undefined Group	Muncho-McConnell	
DATING METHOD:	Fossil		
DATING METHOD:	Fossil		

LITHOLOGY: Dolomite
Sandstone
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

A 300 to 900-metre thick succession of dolostone (dolomite) with minor limestone and sandstone forms rugged peaks and cliffs just east of the Ospika River in the vicinity of Williston Lake.

The succession is comprised of the Lower Silurian Nonda Formation, the Silurian and Devonian Muncho-McConnell Formation and the Lower to Middle Devonian Stone Formation. Extensive folding and thrust faulting causes the sequence to outcrop in a series of parallel bands extending north-northwest from the east arm of Williston Lake (formerly the Peace River) for at least 110 kilometres. Individual bands vary up to 63 kilometres in length and 9.3 kilometres in width.

The Nonda Formation consists of 200 to 660 metres of massive, medium grey weathering dolostone containing ubiquitous quartz silt and sand. Chert nodules and silicified fossils are also common.

The overlying Muncho-McConnell Formation is comprised of light grey weathering, massive cliff-forming dolostone with a variable sand and silt content that generally increases upwards. Some brecciation is evident. The unit is 410 to 564 metres thick in this region.

The Stone Formation consists of a lower 254 to 463-metre thick member comprised of banded light grey and brownish dolostone and sandy dolostone overlain by an upper 100 to 150-metre thick member containing medium to thickly bedded, light grey dolomitic siltstone. dolomitic sandstone, dolostone and sandy dolostone. The dolostone is medium to fine grained.

The most significant exposure occurs along the Bernard anticline, centered 20 to 28 kilometres east of the Ospika River. Here, the dolostone outcrops along the syncline over a length of 11 kilometres with widths of between 7.5 and 9.3 kilometres along most of its length.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
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PAGE: 43
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR IND MIN FILE (McCammon, J.W. (1980), Dolomite Occurrences in
British Columbia, p. 3 (in Ministry Library))
GSC MAP 22-1963; 1232A; 1634A
GSC MEM *425, pp. 27,28
GSC OF 536
GSC P 69-11, pp. 27-31

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/25

CODED BY: GSB
REVISED BY: PSF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 021**

NATIONAL MINERAL INVENTORY: 094B3 Zn1

NAME(S): **CORAL #2**, LAC ST. PIERRE, CORAL

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 09 30 N
LONGITUDE: 123 24 39 W
ELEVATION: 1750 Metres

NORTHING: 6223778
EASTING: 474482

LOCATION ACCURACY: Within 500M

COMMENTS: Outcrop of dolomite breccia, 10 by 12 metres in area, with smithsonite matrix (Assessment Report 16245).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
COMMENTS: Only minor disseminated sphalerite was observed in drill core.

ASSOCIATED: Dolomite
COMMENTS: Matrix forming and vein sparry white dolomite.

ALTERATION: Smithsonite
COMMENTS: Abundant disseminated smithsonite.

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Disseminated Stratiform
CLASSIFICATION: Replacement Epigenetic
COMMENTS: Ten by twenty-five metre area of smithsonite cement breccia rubble.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Undefined Group	Stone	
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Fossiliferous Dolomite Breccia
Fossiliferous Dolomite

HOSTROCK COMMENTS: A dolomite breccia approximately 6 to 20 metres thick lies at the contact between the Stone and Dunedin formations.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Ancestral North America Paleozoic platformal carbonates.

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Zinc 2.3600 Per cent
COMMENTS: Assay of rock sample 2430.
REFERENCE: Assessment Report 15040.

CAPSULE GEOLOGY

The Coral #2 occurrence, located 3 kilometres southeast of Mount Burden and 100 kilometres north of the town of MacKenzie, occurs in Ancestral North America terrane Paleozoic platformal carbonates. Ordovician Skoki Formation, Silurian Nonda Formation, Silurian and Devonian Muncho-McConnell Formation, and Lower and Middle Devonian Stone Formation and Middle Devonian Dunedin Formation carbonates, overlain by Devonian and Mississippian Besa River Formation limy shale and Mississippian Prophet Formation cherty dolomite, are exposed in a folded thrust plate, east of Mount Burden. West of Mount Burden, Cambrian to Ordovician Kechika Group clastics and carbonates, Ordovician Skoki Formation carbonates and Nonda Formation carbonates comprise the Mount Burden anticlinorium. The surface showing, discovered in 1985, 300 metres southwest of Lac St. Pierre, comprises 10 by 25 metres of dolomite breccia cemented with smithsonite and minor disseminated sphalerite. A rock sample, collected in 1985, assayed 2.36 per cent zinc, 0.01 per cent lead and 0.343 grams per tonne silver (Assessment Report 15040).

CAPSULE GEOLOGY

Follow-up drilling intersected 0.34 per cent zinc and 0.01 per cent lead in a 20-centimetre zone of dolomite breccia (Assessment Report 15040). The dolomite breccia at the base of the Dunedin Formation varies in thickness from 6.5 to 19.5 metres and is probably the same horizon that hosts the Coral occurrence (094B 008) a few kilometres to the east.

BIBLIOGRAPHY

EMPR EXPL 1977-E210; 1985-C343; 1986-C377; 1987-C318
EMPR ASS RPT 6552, 13724, *15040, *16245
GSC MEM 425
GSC MAP 1634A
GSC P 69-11

DATE CODED: 1991/02/26
DATE REVISED: 1992/03/25

CODED BY: GKK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 022**

NATIONAL MINERAL INVENTORY:

NAME(S): **CARBON CREEK NORTH**, NORTH CARBON CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B02W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 56 02 45 N
LONGITUDE: 122 46 21 W
ELEVATION: Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6211204
EASTING: 514172

LOCATION ACCURACY: Within 1 KM

COMMENTS: Latitude and longitude indicate the approximate centre of the property (Coal Assessment Report 505).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal

MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Carbonaceous Sandstone
Siltstone
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

Coal seams, which occur in the Lower Cretaceous Gething Formation, Bullhead Group to the south in the Carbon Creek property (0930 028), are not evident in outcrop on the Carbon Creek North property.

The structure consists of a main syncline, the Carbon syncline, whose moderately sinuous axis extends south-southeast and plunges from the north and south forming a basin-like structure, at the north end of which the property is situated. Rocks consist of carbonaceous sandstone and siltstone.

BIBLIOGRAPHY

EMPR COAL ASS RPT 505
GSC MEM 425
GSC MAP 1634A

DATE CODED: 1986/02/10
DATE REVISED: 1992/03/20

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 023**

NATIONAL MINERAL INVENTORY:

NAME(S): **DUNLEVY**

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094B01W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 10 00 N
LONGITUDE: 122 22 35 W
ELEVATION: Metres

NORTHING: 6224804
EASTING: 538725

LOCATION ACCURACY: Within 1 KM

COMMENTS: The coordinates are for the approximate centre of the property (Coal Assessment Report 513).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal

MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel

TYPE: A04 Bituminous coal

SHAPE: Irregular

MODIFIER: Folded Faulted

COMMENTS: Series of northwest trending folds, cut by northwest trending, southwest dipping thrust faults.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

TERRANE: Overlap Assemblage

METAMORPHIC TYPE: Regional

RELATIONSHIP: Post-mineralization

GRADE:

CAPSULE GEOLOGY

Forty one coal seams, ranging from 0.03 to 0.8 metre in thickness, of which 10 are greater than 0.3 metre thick, occur in the Lower Cretaceous Gething Formation (Bullhead Group), interbedded with mudstones, fine-grained sandstones, and siltstones of fluvial-deltaic origin.

The northwest trending structure consists of several broad to tight folds cut by north to northwest trending, south dipping thrust faults in the east and southwest.

BIBLIOGRAPHY

EMPR COAL ASS RPT 513
GSC MEM 425
GSC MAP 1634A

DATE CODED: 1986/02/10
DATE REVISED: 1992/03/20

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 024**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILLISTON (EAST BLOCK)**, EAST BLOCK, BULLHEAD MOUNTAIN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094B01E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 56 10 00 N
LONGITUDE: 122 09 25 W
ELEVATION: Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6224949
EASTING: 552352

LOCATION ACCURACY: Within 1 KM

COMMENTS: The centre of the East Block, east of Butler Ridge (Coal Assessment Report 688).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal

MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Bullhead	Gething	
Jurassic-Cretaceous	Minnes	Brenot	

LITHOLOGY: Sandstone
Shale
Conglomerate
Siltstone
Mudstone
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

METAMORPHIC TYPE: Regional

RELATIONSHIP: Post-mineralization

GRADE: HVol Bituminous

COMMENTS: Coal is high volatile bituminous "C" rank.

CAPSULE GEOLOGY

In the Williston occurrence, one main coal seam, the lowermost Gething seam, and a large number of thinner coal seams, most less than 1.0 metre thick, occur in the Lower Cretaceous Gething Formation, Bullhead Group. At this location, the formation is less than 300 metres thick and consists of sandstone, shale, siltstone, mudstone, and minor conglomerate. A few thin and discontinuous coal seams occur in the Brenot Formation of the Upper Jurassic and Lower Cretaceous Minnes Group.

The regional structure trends northwest. In the East Block the Bullhead syncline separates a thrust faulted anticline from the Bullhead anticline.

The coal is all of high volatile bituminous "C" rank. Two samples from a seam, intersected at 22.5 to 25.6 metres in Drill Hole WlMH 81-11, contain 25.8 to 69.7 per cent ash, 11.4 to 19.4 per cent volatile matter, 16.2 to 52.9 per cent fixed carbon and 0.23 to 0.59 per cent sulphur (air dried basis and dried basis).

BIBLIOGRAPHY

EMPR COAL ASS RPT *688
GSC MEM 425
GSC MAP 1634A
*Loader, J. (1980): Williston Lake Project (unpublished internal company report)

DATE CODED: 1986/02/10
DATE REVISED: 1992/03/20

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILLISTON (WEST BLOCK)**, WEST BLOCK, DUNLEVY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094B01W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 56 11 30 N
LONGITUDE: 122 23 55 W
ELEVATION: Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6227575
EASTING: 537321

LOCATION ACCURACY: Within 1 KM

COMMENTS: The coordinates indicate the centre of the West Block (Coal Assessment Report 688).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal

MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Bullhead	Gething	
Jurassic-Cretaceous	Minnes	Brenot	

LITHOLOGY: Sandstone
Shale
Conglomerate
Siltstone
Mudstone
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

METAMORPHIC TYPE: Regional

RELATIONSHIP: Post-mineralization

GRADE:

COMMENTS: Coal is high volatile bituminous "C" rank.

CAPSULE GEOLOGY

In the Williston occurrence, one main coal seam, the lowermost Gething seam, and a large number of thinner coal seams, most less than 1.0 metre thick, occur in the Lower Cretaceous Gething Formation, Bullhead Group. At this location, the formation is less than 300 metres thick and consists of sandstone, shale, siltstone, mudstone, and minor conglomerate. A few thin and discontinuous coal seams occur in the Brenot Formation of the Upper Jurassic and Lower Cretaceous Minnes Group. The regional structure trends northwest.

The structure in the West Block consists of the Central Dunlevy syncline which is flanked to the east and west by the Butler-Portage and Gething-Stott structural zones, respectively. The structure is relatively simple within the property boundaries (ie. in the Dunlevy syncline), however, subsidiary folds and faults associated with the more deformed zones to the west and east are probably present.

The coal is all of high volatile bituminous "C" rank. Two samples from a seam, intersected at 22.5 to 25.6 metres in Drill Hole WLMH 81-11, contain 25.8 to 69.7 per cent ash, 11.4 to 19.4 per cent volatile matter, 16.2 to 52.9 per cent fixed carbon and 0.23 to 0.59 per cent sulphur (air dried basis and dried basis).

BIBLIOGRAPHY

EMPR COAL ASS RPT *688
GSC MEM 425
GSC MAP 1634A
*Loader, J. (1980): Williston Lake Project (unpublished internal company report)

DATE CODED: 1986/02/10
DATE REVISED: 1992/03/20

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 025**

MINFILE NUMBER: **094B 026**

NATIONAL MINERAL INVENTORY:

NAME(S): **BULLHEAD MOUNTAIN**, PORTAGE MOUNTAIN-BUTLER RIDGE, BUTLER RIDGE,
RESCHKE, PACKWOOD

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094B01E 093O16E
BC MAP:

Underground

MINING DIVISION: Liard

LATITUDE: 56 04 10 N
LONGITUDE: 122 08 05 W
ELEVATION: Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6214146
EASTING: 553868

LOCATION ACCURACY: Within 1 KM

COMMENTS: The coordinates indicate the approximate centre of the property,
which extends along a northwest trend from 56 degrees 13 minutes
north to 55 degrees 57 minutes north (Coal Assessment Report 470).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Shale
Conglomerate
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

RELATIONSHIP: Post-mineralization GRADE:

CAPSULE GEOLOGY

Coal occurs in the Lower Cretaceous Gething Formation, Bullhead Group interbedded with sandstone, siltstone, shale, and minor conglomerate. Several old mines occur on the property including the "SW", "NE", and King Gething (0930 030). The Gully seam and King seam are present along with other coal outcrops. Very little is known of coal extent, thickness or quality.

The structure consists of a series of northwest trending folds, the West Crest Butler Ridge anticline, the Bullhead Mountain syncline and the Bullhead Mountain anticline. The latter two folds plunge to the north. The folds are cut, mainly at the south end of the property, by northwest trending, southwest dipping thrust faults such as the East Portage Mountain thrust fault. West of the property boundary to the north is the Butler Ridge thrust zone.

BIBLIOGRAPHY

EMPR AR 1944-88,129; 1945-139,172; 1946-218,248; 1947-238,266;
1948-204,242; 1949-278,309-310; 1950-245,276; 1951-249,290;
1952-286,322; 1953-226,259; 1954-214,249; 1955-132,163;
1956-198,225-226; 1957-121,145; 1958-135,155; 1959-253,274;
1960-218,238
EMPR COAL ASS 470
EMPR FIELDWORK 1982, pp. 93-98; 1983, pp. 123-130
GSC MAP 1634A
GSC MEM 425

DATE CODED: 1986/02/10
DATE REVISED: 1992/03/23

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

The area is underlain by carbonate and clastic rocks of the Cambrian-Ordovician Kechika Group, Ordovician to Devonian Road River Group and the Lower and Middle Ordovician Skoki Formation. The Kechika Group comprises cleaved, phyllitic, calcareous siltstone and shale, silty limestone, banded limestone and sandstone. The upper contact of the Kechika Group with the overlying Skoki Formation is gradational and conformable. The Skoki Formation consists of three distinctly coloured units. A middle, light grey dolomite is bounded by dark grey, more massive dolomite units. The middle unit contains a conspicuous dark green weathering volcanic unit consisting of basaltic flows and pyroclastics. The rest of the section consists of medium bedded sandy dolomite and dolomite. The Skoki Formation has a definite western limit beyond which it changes facies to black shales, cherts and siltstones of the lower part of the Road River Group. The upper contact is conformable, comprising a gradation from dolomite, silty dolomite and dolomitic siltstone to brown weathering laminated siltstone of the Road River Group.

The Road River Group comprises an Ordovician graptolitic shale-quartzite unit, a Silurian breccia unit and carbonaceous unit, a Silurian-Devonian brown siltstone unit, and a Devonian dolomitic quartz sandstone unit. In the Aley property area, the Road River Group is represented by the Ordovician graptolitic shale-quartzite unit.

This miogeoclinal succession, of the continental margin of ancient North America, was deposited near the shelf/off-shelf boundary and intruded by the Mississippian Aley Carbonatite Complex prior to the main Late Jurassic-Early Cretaceous orogenic event (formation of the northern Rocky Mountains). The youngest unit affected by the intrusion is the Skoki Formation volcanic sequence. Two potassium-argon dates have been obtained from mica separates from the Aley complex, 339 plus/minus 12 million years and 349 plus/minus 12 million years (Open File 1987-17).

The carbonatite complex is oval in outline with a diameter of 3 to 3.5 kilometres, occupying an area of approximately 7 square kilometres. The body is cylindrical in the third dimension with a near vertical axis and has probably been only slightly tilted from its original orientation. It consists of a rauhaugite (dolomitic carbonatite) core zone surrounded by an older, outer ring of amphibolite. Some sovite (calcitic carbonatite) and rare-earth carbonate veins occur in the rauhaugite core. A contact aureole of recrystallized carbonate rocks surrounds the amphibolite margin. Rare-earth carbonate-rich ferrocarbonatite dykes intrude the contact aureole. Ultramafic lamprophyre dykes and a diatreme breccia pipe intrude altered and fresh carbonates outside the complex.

The Aley complex and its contact aureole are part of an imbricate thrust sheet of the northern Rocky Mountains, bounded to the west by a high-angle thrust fault juxtaposing Cambrian rocks of the contact aureole against unmetamorphosed Silurian rocks. The Silurian rocks form part of the tectonically thinned eastern limb of a tight anticline with a Cambrian core to the west. This structural element is dissected by faults striking at high angles to the Rocky Mountain trend. Along the eastern side of the complex a tectonically thinned, reversed stratigraphic section, with a set of subparallel lower angle thrust faults, is thrust onto an imbricated sheet containing Silurian rocks (to the east of the area mapped). Parts of the carbonatite complex may be faulted out above and below the exposed level. The fault zones along the eastern and western side of the Aley complex are mapped as two branches of the Burden thrust (Fieldwork, 1986).

Approximately 50 mineral species are identified in the Aley carbonatite complex (Fieldwork 1986, page 285). Niobium-rich phases of economic interest include fersmite, pyrochlore and columbite. The abundance of apatite also provides a possible phosphate inventory.

The rauhaugite core zone of the Aley complex is approximately 2 kilometres in diameter. It comprises more than 50 per cent of the exposed complex and consists of dolomite (80 to 95 per cent) and apatite (5 to 15 per cent) with minor amounts of phlogopite, pyrite, magnetite and zircon. It is generally a massive and homogeneous unit, weathering buff to brownish. Different degrees of deformation and alteration resulted in a variety of textures. Apatite occurs as prismatic crystals or disk-like flattened aggregates oriented parallel to the planar fabric. Fersmite forms fibrous to fine-grained aggregates replacing euhedral pyrochlore. Primary fersmite is rare. Columbite is present as a replacement of fersmite. Alteration of this core zone includes extensive chloritization and minor silicification of narrow fracture zones with relatively abundant fersmite and/or pyrochlore. Metallic black, granular aggregates are widespread and consist of chlorite-rutile mixtures or dolomite with thin niobium rutile lamellae grown along the

CAPSULE GEOLOGY

rhombohedral cleavage.

Generally, mineralization is characterized by a preferred orientation of mineral crystals and grains, swirl-textures and compositional banding. Economic minerals are also associated with massive pods and bands of accessory minerals (magnetite). It appears that the niobium phases are zoned within the carbonatite complex, namely: 1) pyrochlore occurs at the top and outer margins of the carbonatite; 2) columbite occurs lower and at the central core of the carbonatite; and 3) fersmite occurs at the transition between pyrochlore and columbite.

Sovite zones (dykes?) occur locally near the margin of the rauhaugite core zone and in the surrounding amphibolite zone. It typically displays a strong parallel fabric marked by a cleavage and mineral layering. The sovites exhibit a more varied mineralogy than the rauhaugites. Calcite with or without dolomite dominates and also includes apatite, biotite, magnetite, sodic amphibole (richterite), pyrochlore and fersmite. Accessory minerals include zircon and rare baddeleyite associated with zirkelite. Small amounts of chlorite and secondary quartz may form in zones of higher strain.

An amphibolitic margin, approximately 1 kilometre in width, encircles and complexly interfingers with the rauhaugite core. The marginal zone includes massive and breccia phases. No distinct pattern to the spatial distribution of the two phases is evident. Carbonatite dykes cut both members. The massive phase is a medium to coarse-grained, dark green rock consisting primarily of sodic amphibole (arfvedsonite), quartz, albite and aegirine. It is more extensively developed than the breccia phase and resembles fenites associated with some other carbonatite complexes in British Columbia (Open File 1987-17). However, Mader (Fieldwork 1986), has recognized microsyenitic textures in the massive amphibolite, and suggests that it is a primary igneous phase with a metasomatic (fenitic) overprint. The breccia phase contains subrounded clasts of dominantly orthoquartzite, with some siltstone, albitite, and syenite fragments in a matrix that is similar to the massive phase. The clast-to-matrix ratio is highly variable and clast-supported breccias are locally developed. The subrounded nature of clasts give this unit the appearance of a conglomerate. The massive and breccia phases locally grade into one another.

Sedimentary rocks adjacent to the Aley carbonatite complex have been altered for a distance of approximately 500 metres beyond the amphibolite margin. This alteration is characterized by a colour change from grey to buff which is indicative of a limestone to dolomite transition. The altered rocks can look superficially similar to material from the rauhaugite core zone. Apatite, pyrite and magnetite are developed in the alteration zone. White mica and potassium feldspar are the only common metamorphic minerals observed and the degree of alteration decreases outward from the complex. Silicification and growth of richterite amphibole is observed with 10 to 40 centimetres of the contact. Trace element abundances (niobium, rare-earth elements, thorium, fluorine) and radioactivity can be correlated with the degree of alteration, also decreasing outward.

Dykes or "sweats" enriched in rare-earth elements (REE) occur throughout the complex but are most common in the outer alteration halo. The dykes weather dark reddish brown, are generally intruded parallel to bedding, and average 0.5 to 1.5 metres in thickness. Their primary component is dolomite. Accessory minerals include purple fluorite, pyrite, barite, secondary quartz, bastnaesite and other rare-earth carbonate minerals. Burbankite, cordylite and huanghoite are probably primary igneous rare-earth carbonates whereas the hydrous carbonates and various calcium-strontium-barium carbonates are part of the alteration assemblage (see Aley Dykes, 094B 028).

Preliminary exploration has identified eight niobium-bearing zones within the rauhaugite core zone. These are the Ridge, Bear, Bear Extension, East, Saddle, Saddle West, Goat and Central zones. The potential exists for open pitable bodies of mineralization grading 0.66 to 0.75 per cent niobium (Assessment Report 16484).

The average grade of the carbonatite is approximately 5 per cent P205 representing approximately 10 per cent apatite. If the entire carbonatite core contains this amount of apatite then the deposit may have a resource potential exceeding 15 billion tonnes at this grade (Fieldwork 1987, page 407).

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- EMPR EXPL 1983-467
- EMPR MER 1984, p. 22; 1985, p. 30; 1986, pp. 16,47

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RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 54
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EMPR PF (Notes from CIM District 6 Meeting, Oct. 1986)
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GSC P 69-11
GSC MAP 37-1961; 22-1963; 1232A; 1634A
*Mader, U.K. (1986): The Aley Carbonatite Complex, Unpublished M.Sc.
Thesis, University of British Columbia

DATE CODED: 1986/12/08
DATE REVISED: 1991/08/14

CODED BY: ELF
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: Y

CAPSULE GEOLOGY

carbonate and clastic rocks of the Kechika Group, Skoki Formation and Road River Group. This miogeoclinal succession, deposited near the shelf/off-shelf boundary, was intruded by the Aley carbonatite complex (094B 027) prior to the main Late Jurassic-Early Cretaceous orogenic event. The complex consists of a rauhaugite (dolomitic carbonatite) core zone, 2 kilometres in diameter, surrounded by an older, outer ring of amphibolite. A contact aureole of recrystallized carbonate rocks surrounds the amphibolite margin. Rare-earth, carbonate-rich dykes occur throughout the complex but are most common in the outer alteration halo (contact aureole).

The dykes weather dark reddish-brown, are generally intruded parallel to bedding, and average 0.5 to 1.5 metres in thickness. Their primary component is dolomite. Accessory minerals include purple fluorite, pyrite, barite, quartz, bastnaesite and other rare earth carbonate minerals. Barium, strontium and total rare-earth elements may reach major element concentrations in the dykes. The dykes may represent residual, low-temperature liquids derived from a dolomite carbonatite-like parental melt.

Numerous minerals occurring in the carbonatite complex have been identified; refer to Geological Fieldwork 1986, Table 4-5-1, page 285 for a comprehensive list. Some minerals of interest, occurring in the dolomite carbonatite (core zone), include monazite, cheralite, thorianite, zirkelite and thorite.

Whole rock sampling of the barite-rich rare-earth element carbonatite dykes from the northwest ridge analyzed 0.721 per cent cerium, 0.358 per cent neodymium, 0.229 per cent lanthanum, 0.084 per cent thorium, 0.07 per cent strontium and 7.74 per cent barium (Fieldwork 1986).

See Aley (094B 027) for further details on the Aley carbonatite.

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DATE CODED: 1990/08/03
DATE REVISED: 1990/08/13

CODED BY: LDJ
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094B 029**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT LUDINGTON**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B06E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 27 45 N
LONGITUDE: 123 14 51 W
ELEVATION: 1500 Metres

NORTHING: 6257584
EASTING: 484749

LOCATION ACCURACY: Within 500M

COMMENTS: Phosphorite bed in a measured section on the eastern flank of Mount Ludington (Geological Survey of Canada Paper 70-31).

COMMODITIES: Phosphate

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Middle Triassic

DEPOSIT

CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Nodule-bearing units rarely exceed 2 metres in thickness.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Triassic	Undefined Group	Toad	

LITHOLOGY: Siltstone
Carbonaceous Quartzitic/Quartzose Dolomitic Siltstone
Silty Shale
Phosphorite

HOSTROCK COMMENTS: Black phosphatic nodules up to 4 centimetres in diameter are scattered throughout Triassic Toad Formation siltstone.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Mount Ludington lies at the Foothills' western boundary.

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

The Mount Ludington occurrence lies on the east flank of Mount Ludington, approximately 130 kilometres north of the town of MacKenzie.

A 135-metre measured section of Middle Triassic Toad Formation black, very carbonaceous, quartzose and dolomitic siltstone and silty shale hosts phosphate nodules, phosphate-cemented siltstone, phosphatic lenticles and phosphatic fossil debris. Phosphate nodules are black, ovoid to spherical, 1 to 3 centimetres in diameter and comprise 5 to 20 per cent of the rock by volume. The nodules stand out in relief on weathered surfaces. Individual nodule-bearing units rarely exceed 1 or 2 metres in thickness. The lower part of the phosphate-bearing sequence is marked by the presence of large calcareous concretions and the upper limit by a change to less carbonaceous and more carbonate-rich strata.

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GSC MEM 425
GSC MAP 1634A

DATE CODED: 1988/02/10
DATE REVISED: 1991/03/20

CODED BY: SBB
REVISED BY: GKK

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094B 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **Laurier Pass**, CALNAN CREEK

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B13E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 50 55 N
LONGITUDE: 123 31 36 W
ELEVATION: 1675 Metres

NORTHING: 6300658
EASTING: 467877

LOCATION ACCURACY: Within 500M

COMMENTS: A phosphorite bed in a measured section 12 kilometres north of Mount Laurier (Geological Survey of Canada Paper 70-31).

COMMODITIES: Phosphate

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Middle Triassic

DEPOSIT

CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: 62 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Phosphate-bearing strata is at least 62 metres thick.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Triassic	Undefined Group	Toad	

LITHOLOGY: Siltstone
Quartzitic/Quartzose Siltstone
Calcareous Carbonaceous Siltstone
Silty Shale
Phosphorite

HOSTROCK COMMENTS: Black phosphatic nodules up to 4 centimetres are scattered throughout Toad Formation siltstone.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

The Laurier Pass occurrence consists of a phosphatic horizon observed in a measured section, 12 kilometres north of Mount Laurier and 170 kilometres north of the town of MacKenzie (Geological Survey of Canada Paper 70-31).

Phosphate-bearing strata occur in the Middle Triassic Toad Formation over a stratigraphic interval of at least 62 metres. The dominant form of phosphate is black ovoid to spherical nodules that vary in size from 1 to 3 centimetres. Phosphatic cement may also be present. Nodular-bearing beds vary from 1 to 2 metres in thickness. Calcareous concretions occur in the lower part of the phosphatic sequence together with an abundance of phosphatic lenticles.

Host lithologies consist of shale and weakly carbonaceous and/or calcareous, generally quartzose siltstones. Most of these rocks are very weakly phosphatic.

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GSC P 70-31
GSC MEM 425
GSC MAP 1634A

DATE CODED: 1988/02/10
DATE REVISED: 1991/03/20

CODED BY: SBB
REVISED BY: GKK

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094B 033**

NATIONAL MINERAL INVENTORY: 094B12 Zn2

NAME(S): **SMITH, BRIN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094B12E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 38 49 N
LONGITUDE: 123 35 20 W
ELEVATION: 1400 Metres

NORTHING: 6278242
EASTING: 463888

LOCATION ACCURACY: Within 1 KM

COMMENTS: Lead and zinc bearing carbonate is exposed on a steep bluff on the north side of the valley (Assessment Report 4873).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: Disseminated zinc and lead sulphides.

ASSOCIATED: Dolomite Quartz

ALTERATION: Limonite

COMMENTS: Limonite stains were noted on cliff faces.

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn

COMMENTS: Disseminated sulphides occur in an irregular discontinuous carbonate breccia.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Coarse Grained Dolomite Breccia

HOSTROCK COMMENTS: Dunedin Formation dolomite breccia above the Stone Formation contact.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

COMMENTS: Ancestral North American Paleozoic platformal carbonates.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1974
SAMPLE TYPE: Grab
COMMODITY GRADE
Zinc 0.0900 Per cent

COMMENTS: Fine dolomite breccia also contains 0.01 per cent lead.
REFERENCE: Assessment Report 5370.

CAPSULE GEOLOGY

The Smith occurrence, located near the head waters of the Graham River, approximately 160 kilometres north of the town of MacKenzie and 3 kilometres southeast of the Perkins occurrence (094B 015), is hosted in Ancestral North America terrane Paleozoic platformal carbonates.

Silurian Nonda Formation, Silurian and Devonian Muncho-McConnell Formation and Lower and Middle Devonian Stone Formation and Middle Devonian Dunedin Formation carbonates, overlain by Devonian and Mississippian Besa River Formation shales, lie on the northeast flank and in the core of the Bernard anticline, a prominent north trending structure. The north end of the Bernard anticline terminates in a small dome overlain by Upper Silurian and Lower Devonian strata.

Following the Robb Lake discovery (094B 005) in 1970, a regional silt sampling program identified numerous lead and zinc anomalies within the platformal carbonates. Follow-up soil sampling and prospecting led to the discovery of the Smith showing, 11 kilometres southeast of Lady Laurier Lake. Minor disseminated sphalerite and galena are hosted in limonite stained Dunedin Formation dolomite breccia exposed in a steep south facing bluff. A

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CAPSULE GEOLOGY

grab sample of dolomite breccia contained 0.09 per cent zinc and less than 0.01 per cent lead (Assessment Report 5370).

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GSC MEM 425
Chevron File

DATE CODED: 1991/02/22
DATE REVISED: 1992/03/23

CODED BY: GKK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 001**

NATIONAL MINERAL INVENTORY: 094C13 Pb1

NAME(S): **INGENIKA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C13W 094D16E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 48 34 N
LONGITUDE: 125 59 40 W
ELEVATION: 1500 Metres

NORTHING: 6300173
EASTING: 317198

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from National Mineral Inventory Card 094C13 Pb1. Shown as Prospect 1 on Geological Survey of Canada Map 1030A (Memoir 274).

COMMODITIES: Gold Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Galena Sphalerite Gold
ASSOCIATED: Quartz
ALTERATION: Limonite Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Hadrynian Ingenika Swannell

LITHOLOGY: Porphyritic Andesite
Micaceous Quartzite
Phyllite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Ingenika showing is located at approximately 1500 metres elevation on the west side of Conical Peak, approximately 3 kilometres south of the Ingenika River.

The showing is reported (Geological Survey of Canada Memoir 274, page 204) to consist of several outcrops of drusy quartz veins mineralized with pyrite and minor amounts of galena, sphalerite and free gold. The immediate hostrock is dark green porphyritic andesite in an area of micaceous quartzites and phyllites of the Hadrynian Swannell Formation, Ingenika Group (Geological Survey of Canada Paper 77-19, page 3). The veins are reported to be as much as 1.2 metres in thickness. Extensive areas of limonite-hematite gossan with no apparent source material are present in the area.

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GSC P 77-19
WWW <http://www.infomine.com/index/properties/INGENIKA.html>

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/25

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 002**

NATIONAL MINERAL INVENTORY: 094C11 Pb2

NAME(S): **FERGUSON**, INGENIKA MINE, INGENIKA

STATUS: Developed Prospect

Underground

MINING DIVISION: Omineca

REGIONS: British Columbia

NTS MAP: 094C11E

BC MAP:

LATITUDE: 56 41 31 N

LONGITUDE: 125 10 30 W

ELEVATION: 880 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6285209

EASTING: 366796

LOCATION ACCURACY: Within 500M

COMMENTS: Located from Figure 13 (Geological Survey of Canada Memoir 274).

COMMODITIES: Silver

Lead

Zinc

Copper

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena Arsenopyrite Chalcopyrite

Tetrahedrite Pyrargyrite Freibergite Pyrrhotite Magnetite

ASSOCIATED: Siderite

ALTERATION: Quartz Sericite

ALTERATION TYPE: Silicific'n Sericitic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Stratabound

CLASSIFICATION: Replacement Epigenetic

TYPE: J01 Polymetallic manto Ag-Pb-Zn

SHAPE: Tabular

COMMENTS: A replacement-type Manto deposit.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Limestone

Quartz Siderite Rock

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: FERGUSON

REPORT ON: Y

CATEGORY: Unclassified

YEAR: 1969

QUANTITY: 22677 Tonnes

COMMODITY

GRADE

Silver

119.9000

Grams per tonne

Lead

9.8000

Per cent

Zinc

6.1000

Per cent

REFERENCE: EMR CORPFILE, Dorita Silver Mines Ltd. Report 1969/11/30.

CAPSULE GEOLOGY

The Ferguson occurrence, thought to be a replacement-type Manto deposit, is located approximately 1.5 kilometres south of the Ingenika River, approximately 106 kilometres north-northeast of Germansen Landing.

Hostrocks are blue-grey to cream-coloured crystalline limestone, probably of the Hadrynian Ingenika Group. Near the showings, the limestones are locally highly contorted and schistose, containing considerable sericite. On most parts of the property, bedding strikes approximately 100 degrees, dipping north 20 to 40 degrees. Regionally, the property appears to be near the nose of a north-plunging drag fold on the west limb of a major anticline which has been overturned to the west.

The limestone is highly silicified in the area of the showings and shows "all gradations from relatively pure limestone to white quartz rock" (Geological Survey of Canada Memoir 274, page 205). Bedding-controlled siderite is also present in the mineralized areas such that the rock consists of parallel laminae of white quartz, 0.25 to 5.0 centimetres thick, separated by layers of dense, brown siderite. Locally, the siderite is not confined to bedding planes but forms large, irregular masses, up to 6 metres in diameter, of coarsely crystalline, nearly pure material. Metallic minerals

CAPSULE GEOLOGY

consist of bedding-controlled pyrite, sphalerite and galena with less important copper and silver sulphide minerals. In addition, mineralographic study (Geological Survey of Canada Memoir 274, page 206) has identified arsenopyrite, pyrrhotite, magnetite, chalcopyrite, tetrahedrite and pyrargyrite. Sphalerite and galena are the most abundant sulphides, constituting more than 90 per cent of the metallic minerals. Pyrite is locally abundant, in layers up to 60 centimetres thick, commonly overlying the base metal sulphides.

Four mineralized horizons are present. The Number 1 zone is the lowest, and is comprised of stratiform but discontinuous, lens-shaped bodies of siderite, sphalerite, and galena up to 1.2 metres thick. The Number 2 and 3 zones are the most significant deposits; they sit 9 metres above the Number 1 zone. These two zones form parallel bands 90 centimetres to 3 metres wide, separated by 30 centimetres to 2.4 metres of poorly mineralized rock. The Number 4 zone is 7.5 metres above the Number 3, and reaches 2.4 metres maximum thickness.

The property has been developed by four adits and a raise totalling more than 550 metres, over 4000 metres of diamond drilling and several trenches. Ore reserves in 1969 (Dorita Silver Mines Report and Balance Sheet, 30/11/69, Mineral Policy Sector Corporation files) were 22,677 tonnes grading 119.9 grams per tonne silver, 9.8 per cent lead and 6.1 per cent zinc. No production from this deposit has ever been recorded.

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EMR MP CORPFILE (Ingenika Mines Ltd., Dorita Silver Mines Ltd. Report
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GSC SUM RPT 1927, Part A, pp. 37,40
PR REL Cross Lake Minerals Ltd., Nov.13, 2002
WWW <http://www.crosslakeminerals.com/>
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/04

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 003**

NATIONAL MINERAL INVENTORY: 094C11 Pb3

NAME(S): **ONWARD**, GEN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C11E
BC MAP:

Underground

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 40 27 N
LONGITUDE: 125 10 02 W
ELEVATION: 800 Metres

NORTHING: 6283215
EASTING: 367210

LOCATION ACCURACY: Within 500M

COMMENTS: Located from Map 1030A, Prospect 3 (Geological Survey of Canada Memoir 274).

COMMODITIES: Lead Silver Zinc

MINERALS

SIGNIFICANT: Galena Sphalerite Pyrite
ASSOCIATED: Siderite Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Stratabound Massive Podiform
CLASSIFICATION: Replacement Epigenetic Hydrothermal
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Hadrynian	Ingenika	Undefined Formation	

LITHOLOGY: Limestone
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1928

COMMODITY	GRADE	
Silver	274.3000	Grams per tonne
Lead	18.0000	Per cent

REFERENCE: Minister of Mines Annual Report 1928, page 185.

CAPSULE GEOLOGY

The Onward property is located on the south shore of Delkluz Lake, 3.5 kilometres south of the Ingenika River, approximately 106 kilometres north-northeast of Germansen Landing.

Hostrocks are blue-grey to cream-coloured crystalline limestone, probably of the Hadrynian Ingenika Group. On the south shore of Delkluz Lake, contorted and brecciated limestone, 7.5 metres thick, contains vein quartz and siderite with discontinuous lenses, some flat-lying, composed mainly of galena, sphalerite and pyrite (Geological Survey of Canada Memoir 274, page 208). Surface trenching and underground exploration has failed to extend the mineralization. A grab sample assayed 274.3 grams per tonne silver, 18.0 per cent lead and nil zinc (Minister of Mines Annual Report 1928, page 185). A second occurrence, located 300 metres to the south, and hosted in a cross-cutting breccia, consists of coarse-grained dark brown resinous sphalerite and fine-grained galena in a matrix of fine-grained calcite.

BIBLIOGRAPHY

EMPR AR *1928-184; 1930-151
EMPR ASS RPT 152, 154
GSC MEM *274, p. 208
GSC MAP 1030A
GCNL #190(Oct.4), 2000

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/04

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 003**

MINFILE NUMBER: **094C 004**

NATIONAL MINERAL INVENTORY: 094C11 Cu1

NAME(S): **BURDEN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C11E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 41 02 N
LONGITUDE: 125 07 02 W
ELEVATION: 730 Metres

NORTHING: 6284202
EASTING: 370306

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from Map 1030A, Prospect 4 (Geological Survey of Canada Memoir 274).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite

ASSOCIATED: Quartz Calcite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Calcareous Talc Sericite Schist

HOSTROCK COMMENTS: Hostrocks could also be part of the Lower Cambrian Atan Group.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1928

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

20.6000

Grams per tonne

Copper

0.7000

Per cent

REFERENCE: Minister of Mines Annual Report 1928, page 185.

CAPSULE GEOLOGY

The Burden property is located on the east bank of the Swannell River, due east of the Ferguson workings (094C 002), approximately 105 kilometres north-northeast of Germansen Landing.

Hostrocks are calcareous talc sericite schist thought to be part of the Hadrynian Ingenika Group (Geological Survey of Canada Memoir 274, page 209). The showings occur in a 4.5-metre thick section of interlayered schist and quartz, which strikes 113 degrees and dips 20 degrees northeast. The showings consist of several masses of white vein quartz cut by veins and patches of cream-coloured, coarsely crystalline calcite with blebs and stringers of pyrite and chalcopyrite. A selected sample assayed 20.6 grams per tonne silver and 0.7 per cent copper (Geological Survey of Canada Annual Report 1928, page 185). A rounded boulder of massive pyrite and chalcopyrite, approximately 120 by 60 by 60 centimetres, was located about 30 metres downstream.

BIBLIOGRAPHY

EMPR AR *1928-185
GSC MEM *274, p. 209
GSC MAP 1030A
GSC MAP 48-5A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/05

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 005**

NATIONAL MINERAL INVENTORY: 094C11 Pb1

NAME(S): **SWANNELL**

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C11E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 37 53 N
LONGITUDE: 125 10 23 W
ELEVATION: 800 Metres

NORTHING: 6278467
EASTING: 366702

LOCATION ACCURACY: Within 500M

COMMENTS: Located from Map 1030A, Prospect 5 (Geological Survey of Canada Memoir 274).

COMMODITIES: Lead Zinc Silver Copper Gold

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite Covellite
ASSOCIATED: Quartz Calcite
ALTERATION: Quartz Graphite Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Massive Breccia Vein
CLASSIFICATION: Exhalative Syngenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au J01 Polymetallic manto Ag-Pb-Zn
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Hadrynian Ingenika Undefined Formation

LITHOLOGY: Limestone
Argillaceous Schist
Slate

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 279.1000 Grams per tonne
Gold 0.6900 Grams per tonne
Lead 24.6000 Per cent
Zinc 27.4000 Per cent
REFERENCE: Geological Survey of Canada Memoir 274, page 210.

CAPSULE GEOLOGY

The Swannell property is located on the Swannell River, 5 kilometres south of the Ferguson occurrence (094C 002) near Delkluz Lake. Germansen Landing is 100 kilometres south-southeast. The showings are located on both banks of the Swannell River, with the best exposures in a deep trench cut by the river. Hostrocks are dark grey to black argillaceous schists and slates interbedded with thin-bedded, blue-grey limestones (Geological Survey of Canada Memoir 274), all of which are probably part of the Hadrynian Ingenika Group. The rocks are highly sheared and contorted, generally with a northwest strike and a vertical dip. Graphite is common in the rocks, as are white quartz veins up to 2.5 metres in width which are commonly parallel to bedding. According to Memoir 274, three types of mineral deposit are present. Some of the quartz veins carry up to 5 per cent pyrite as well as galena, sphalerite, and minor malachite and covellite. One 0.5-metre wide vein exposed over a length of 50 metres has been repeated by isoclinal folding to a width of 2.5 metres. The second mineral deposit type consists of layers of quartz, crystalline calcite, sphalerite, galena and minor pyrite in

CAPSULE GEOLOGY

blue-grey, thin-bedded limestone. The host strata are drag-folded, and the mineralized layers are stratiform. A composite assay (Geological Survey of Canada Memoir 274, page 210) of two selected samples was 0.69 gram per tonne gold, 279.1 grams per tonne silver, 0.05 per cent copper, 24.6 per cent lead and 27.4 per cent zinc.

The third type consists of bedding-parallel layers of coarse granular pyrite and fine galena and sphalerite in brecciated silicified blue-grey limestone. One layer containing approximately 10 per cent sulphides reaches 3 metres in thickness. Some layers consist of semimassive sulphides. In a 1985 diamond drill program (Assessment Report 14032), Cominco Limited reported "fracture controlled" galena-sphalerite mineralization and a grade of 0.23 per cent lead and 5.2 per cent zinc across 9.5 metres in the best hole.

BIBLIOGRAPHY

EMPR AR 1956-30; 1957-13
EMPR ASS RPT 153, 1136, 1584, 13452, *14032
GSC MAP 1030A
GSC MEM *274, p. 209
PR REL Cross Lake Minerals Ltd., Nov.13, 2002
WWW <http://www.infomine.com/>; <http://www.crosslakeminerals.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/05

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 006**

NATIONAL MINERAL INVENTORY: 094C12 Pb1

NAME(S): **ORION**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C12E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)

LATITUDE: 56 35 57 N
LONGITUDE: 125 43 30 W
ELEVATION: 1480 Metres

NORTHING: 6276091
EASTING: 332711

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location from Map 1030A, Prospect 6 (Geological Survey of Canada Memoir 274).

COMMODITIES: Lead

MINERALS

SIGNIFICANT: Galena Tetrahedrite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Hadrynian	Ingenika	Unnamed/Unknown Formation	

LITHOLOGY: Micaceous Quartzite
Aplite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

CAPSULE GEOLOGY

The Orion property is located in Orion Creek valley, approximately 3 kilometres north of the Swannell River valley (Geological Survey of Canada Memoir 274).

The showings are hosted in grey and brown, medium to fine-grained, steeply-dipping, well-bedded, micaceous quartzites of the Hadrynian Ingenika Group. The quartzites are cut by a few aplite dikes up to 1 metre wide, and contain massive white quartz veins parallel with the bedding planes. The quartz veins are cut by smaller veins of smoky grey quartz that in some places contain scattered crystals and irregular bodies, up to 30 by 10 centimetres of galena and lesser tetrahedrite. The overall sulphide content is low.

BIBLIOGRAPHY

GSC MEM *274, p. 211
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/27

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 007**

NATIONAL MINERAL INVENTORY: 094C5 Cu1

NAME(S): **PORPHYRY CREEK**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C05W 094D08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 27 07 N
LONGITUDE: 125 59 43 W
ELEVATION: 1240 Metres

NORTHING: 6260404
EASTING: 315410

LOCATION ACCURACY: Within 500M

COMMENTS: Old opencuts and a short adit along Porphyry Creek, 1200 metres north of the confluence with Kliyul Creek, 110 kilometres north-northwest of Germansen Landing (Assessment Report 21521).

COMMODITIES: Copper Gold Molybdenum Lead Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Molybdenite Chalcocite Bornite
Gold Galena Sphalerite

COMMENTS: Rare chalcocite, bornite and native gold.

ASSOCIATED: Quartz Carbonate K-Feldspar

ALTERATION: Chlorite Epidote Biotite Silica Carbonate
Sericite K-Feldspar Hematite

COMMENTS: Also magnetite, saussurite, malachite and azurite.

ALTERATION TYPE: Chloritic Epidote Biotite Silicific'n Carbonate
Potassic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stockwork Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Plughat Mountain	
Jurassic			Unnamed/Unknown Informal
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Hornblende Diorite
Granodiorite
Mafic Intermediate Flow
Pyroclastic
Calcareous Argillite
Limestone
Pyroxenite
Diorite
Quartz Monzonite
Monzonite Dike

HOSTROCK COMMENTS: The Jurassic or older mafic body intrudes the Takla Group at its contact with the Hogem complex and may be related to the complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Regional GRADE:

CAPSULE GEOLOGY

The Porphyry Creek occurrence is near the northern end of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The property covers a volcano-sedimentary assemblage of Upper Triassic Takla Group rocks (Plughat Mountain Formation) which have been intruded by a Jurassic or older mafic-ultramafic stock ("Croydon Ultramafic stock") and calcalkaline intrusions of the Hogem Intrusive Complex. The property encompasses previously known areas of copper, gold and molybdenum mineralization on map sheets 094C05W and 094D08E (see 094C 008, 039, 065, 075 and 094D 113).

The Takla Group is comprised of mafic to intermediate flows, pyroclastics and lesser calcareous argillite and limestone. Intrusive bodies include minor pyroxenite, diorite, quartz diorite, granodiorite and quartz monzonite. Dike compositions include monzonite and rare syenite.

Alteration present in Takla rocks consists of ubiquitous chloritization, local epidotization, biotitization, silicification,

CAPSULE GEOLOGY

recrystallization, partial to total replacement of pyroxene by amphibole, carbonate alteration along faults and shears, and broad hornfelsing. Alteration minerals within intrusive rocks include epidote, saussurite, magnetite, pyrite, potassium feldspar, sericite, quartz and carbonate.

Widespread copper mineralization is evident throughout the property and comprises chalcopyrite, with or without malachite, azurite and rare chalcocite or bornite, and occurs as disseminations, fracture fillings and in shears. Specks of native gold were found in three (quartz)-carbonate veins, with or without copper, and in pan concentrates from Porphyry Creek. Galena, with or without sphalerite, occurs locally in quartz-carbonate veins. Molybdenite is found in quartz-carbonate-(+/-) potassium feldspar veins and stringers, west of Croydon Creek. Hematite is common along fractures and in veins on the west half of the property. Highly significant concentrations of gold and base metals are associated with late-stage intrusive activity.

From recent exploration work, it is apparent that at least two complex mineralizing systems are present on the Porphyry Creek property. The first system occurs on map sheet 094D08E, where in 1964 Rio Tinto recognized the "Davie Creek stock" as part of a porphyry molybdenum system (see Kliyul, 094D 113). The mineralized Davie Creek stock occurs 900 metres north-northwest of the original Porphyry Creek showing which is on adjoining map sheet 094C05W. Roughly 100,000,000 tonnes grading 0.1 per cent MoS₂ was outlined in the Davie Creek stock (Assessment Report 21521, volume 1, page 14). Mineralization is within a tabular (750 by 260 metres), potassically zoned granodiorite intrusion. A weak copper halo, locally coincident with weak tungsten, exists peripheral to the main zone. A broad, strongly gossanous, hornfelsed zone is peripheral to the Davie Creek deposit and extends southeastward along Porphyry Ridge. An examination of 1982 diamond drill core from the Davie Creek stock found features previously unrecognized. The Davie Creek stock, and/or alteration and mineralization within the stock, is genetically related to late-stage intrusive activity. The presence of large screens, xenoliths and previously unrecognized intrusive breccia zones indicate potential for copper and gold mineralization peripheral to the stock, and defines the second mineralizing system on the Porphyry Creek property.

Old opencuts and a 3-metre long adit on map sheet 094C05W (the original Porphyry Creek occurrence, Geological Survey of Canada Memoir 274, page 212) expose a mineralized area consisting of narrow veins and disseminated pyrite, chalcopyrite and molybdenite associated with large masses of white quartz in medium-grained, dark green hornblende diorite. Quartz is exposed at intervals for a length of 60 metres and a width of 18 metres. Lenticular veins of pyrite and molybdenite are up to 10 centimetres wide. Stringers of chalcopyrite up to 1.25 centimetres wide cut both the quartz and the hornblende diorite.

BIBLIOGRAPHY

EMPR OF 1992-1
EMPR BULL 1, p. 14
EMPR ASS RPT *21521
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274, p. 211
GSC MAP 48-5A; 1030A
GSC P 48-5

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/11

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 008**

NATIONAL MINERAL INVENTORY: 094C5 Au3

NAME(S): **CROYDON**, JANE, PORPHYRY CREEK

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:
LATTITUDE: 56 27 28 N
LONGITUDE: 125 58 52 W
ELEVATION: 1240 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of showing and adits (Assessment Report 21521, Geology Map - East Half).

Underground
MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6261015
EASTING: 316311

COMMODITIES: Gold Copper Molybdenum

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Molybdenite Gold
ASSOCIATED: Quartz Magnetite Carbonate
COMMENTS: A cream coloured carbonate mineral is reported.
ALTERATION: Chlorite Serpentine
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Shear
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
DIMENSION:
COMMENTS: Attitude of quartz veins.

STRIKE/DIP: 010/75E TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic Mesozoic			Unnamed/Unknown Informal Hogem Intrusive Complex

LITHOLOGY: Hornblende Diorite
Amphibolite

HOSTROCK COMMENTS: The Jurassic or older hostrock is possibly related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Quesnel
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Chip
COMMODITY GRADE
Gold 3.3000 Grams per tonne
Copper 0.8800 Per cent
COMMENTS: From a 1.5-metre sample across the No. 12 vein.
REFERENCE: Geological Survey of Canada Memoir 274, page 215.

CAPSULE GEOLOGY

The Croyden copper showings are located on the west side of Croyden Creek, 2 kilometres above Kliyul Creek, 110 kilometres northwest of Germansen Landing. The showings are exposed in an outcrop on the west side of the creek with four adits driven from the creek bottom to explore the occurrence (Geological Survey of Canada Memoir 274, page 213). Hostrocks are altered hornblende diorite and amphibolite of the "Croydon Creek pluton", a Jurassic or older intrusion possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex (C. Rees, personal communication, 1992). The dioritic hostrocks have been altered to a green silicate, possibly chlorite or serpentine. Four fracture zones, partially filled with vein quartz, have been called the Number 10, 12, 13 and 14 veins. The fracture zones or "veins" vary in width from several centimetres to about 9 metres. Although individual quartz veins are generally less than 60 centimetres in width, a stockwork of veins sometimes occupies the full width of the fracture zone. The veins strike 010 degrees,

CAPSULE GEOLOGY

dipping 70 to 80 degrees east. Pyrite and chalcopyrite are the main metallic minerals, constituting approximately 5 per cent of the vein material. Local areas of almost massive sulphides form lenses up to 60 centimetres in width and 4.5 metres long. Magnetite, molybdenite and gold accompany the main sulphide minerals and late fractures are commonly filled by a cream-coloured carbonate mineral. A 1.5-metre sample across the width of the Number 12 vein assayed 3.3 grams per tonne gold, 9.6 grams per tonne silver and 0.88 per cent copper (Geological Survey of Canada Memoir 274, page 215). Several other fracture zones and quartz veins are present for an additional 600 metres north from the main showings.

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EMPR PF (1938 Assay Plan)
EMPR AR 1958-11; 1963-38
EMPR BULL 1, p. 8
EMPR ASS RPT 554, 21521
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274, p. 213
GSC MAP 48-5A, 1030A
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/23

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 009**

NATIONAL MINERAL INVENTORY: 094C5 Au1

NAME(S): **GRANITE BASIN**, HALQUINN, RED DYKE,
LAY, SUSIE, HEIDI,
LC

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:
LATITUDE: 56 28 35 N
LONGITUDE: 125 51 45 W
ELEVATION: 1580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of upper adit (Geological Survey of Canada Memoir 274, Figure 15). The Halquinn (formerly 094C 010) and Red Dyke (formerly 094C 011) occurrences have been deleted as independent MINFILE occurrences and combined with the Granite Basin occurrence; all that is known of them is that they are southerly extensions of the Granite Basin zone.

Underground
MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6262775
EASTING: 323703

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Bornite Tetrahedrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Concordant
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 120 x 60 Metres
COMMENTS: Dimension of one of the pyritic zones.

STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u> Triassic-Jurassic Mesozoic	<u>GROUP</u> Takla	<u>FORMATION</u> Plughat Mountain	<u>IGNEOUS/METAMORPHIC/OTHER</u> Hogem Intrusive Complex
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LITHOLOGY: Porphyritic Andesite
Tuff
Argillite
Limestone
Diorite Porphyry
Feldspar Porphyritic Diorite
Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Channel
COMMODITY: Gold GRADE: 11.4000 Grams per tonne
COMMENTS: A 9-metre wide sample taken by the Consolidated Mining and Smelting Co. Ltd. from the underground workings; also the highest grade.
REFERENCE: Geological Survey of Canada Memoir 274, page 218.

CAPSULE GEOLOGY

The Granite Basin gold prospect is located 7 kilometres northwest of the west end of Aiken Lake, 110 kilometres northwest of Germansen Landing.

The showings consist of broad pyritic bands in Upper Triassic Takla Group (Plughat Mountain Formation) andesitic volcanic rocks and intercalated sedimentary rocks intruded by hypabyssal bodies related to the Late Triassic to Cretaceous Hogem Intrusive Complex. The main Takla lithology is porphyritic andesite with hornblende and feldspar phenocrysts (Geological Survey of Canada Memoir 274, page 217). Beds of tuff, argillite and impure limestone are intercalated with the andesite. The layered rocks are cut by hypabyssal bodies of greenish grey hornblende pyritic diorite porphyry which are similar to the

CAPSULE GEOLOGY

andesitic volcanic rocks. These rocks are in turn cut by sill-like grey to buff-coloured feldspar porphyritic diorite with some hornblende phenocrysts. Dikes of feldspar porphyry up to 30 metres in width are the youngest rock type. The feldspar porphyritic diorite is generally heavily pyritized. While the andesite and diorite porphyry are less pyritized, they commonly contain considerable pyrite where they are in contact with the feldspar porphyritic diorite.

Four concordant pyritic zones are present ranging up to 60 metres in width, and 120 metres in length before disappearing under overburden. The area is moderately weathered and in addition to pyrite and chalcopyrite, bornite and tetrahedrite are possibly present. Assays reportedly reach up to 11.4 grams per tonne gold over 9 metres (Geological Survey of Canada Memoir 274, page 218).

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EMPR BULL *1, p. 15
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR GEM 1973-397; 1975-E158; 1976-E171
EMPR OF 1992-11; 1993-2
EMPR PF (Plans and sections with assays, Consolidated Mining and Smelting Company Limited, 1936, 1937)
GSC MAP 1030A, 48-5A
GSC MEM *274, p. 217
GCNL Dec 29, 1975; Feb 4,18, July 19, Aug 22, 24, Sept 9,23, Nov 12, 1976
N MINER Mar 4, 1976; July 3, 1995
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/27

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **ET**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 13 33 N
LONGITUDE: 125 47 32 W
ELEVATION: 1900 Metres

NORTHING: 6234722
EASTING: 326898

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of a 2-kilometre long mineralized area along a northwest-trending ridge (Assessment Report 21426).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Pyrite	Malachite	Bornite	Azurite	
ALTERATION:	Epidote	Limonite	Clay	Biotite	Malachite
ALTERATION TYPE:	Azurite				
ALTERATION TYPE:	Epidote		Oxidation	Argillic	Biotite
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1991
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Copper		1.1000	Per cent

COMMENTS: The sample also assayed 0.15 gram per tonne gold.
REFERENCE: Assessment Report 21426.

CAPSULE GEOLOGY

The ET area is entirely underlain by medium to coarse-grained, massive, dark green-black diorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which consist of numerous intrusive bodies of distinct age. This complex varies in composition between gabbro, diorite, monzonite, syenite and alkali feldspar syenite.

Pyrite, malachite, bornite and azurite mineralization occurs at numerous locations, but in minor amounts, over a northeast-trending area, 2 kilometres in length. Alteration consists mainly of epidote and limonite along with weak argillic and biotite alteration. The best assay, derived from argillically altered diorite, was 0.15 gram per tonne gold and 1.1 per cent copper (Assessment Report 21426).

BIBLIOGRAPHY

EMPR ASS RPT *21426
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1992/07/16
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 011**

NATIONAL MINERAL INVENTORY:

NAME(S): **OS**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 10 12 N
LONGITUDE: 125 48 53 W
ELEVATION: 1950 Metres

NORTHING: 6228567
EASTING: 325250

LOCATION ACCURACY: Within 500M

COMMENTS: Location of high assay sample RX 2546 (Assessment Report 21425).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Pyrite	Malachite	Bornite	Chalcopyrite
ASSOCIATED:	Quartz	Magnetite		
ALTERATION:	Epidote	Limonite	Malachite	
ALTERATION TYPE:	Epidote		Oxidation	
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER:	Disseminated	Vein	Stockwork
CLASSIFICATION:	Porphyry	Hydrothermal	
TYPE:	L03 Alkalic porphyry	Cu-Au	

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Mesozoic

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Diorite
Granite
Lamprophyre Dike
Granite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY

YEAR: 1991

Copper

GRADE

0.1130

Per cent

REFERENCE: Assessment Report 21425.

CAPSULE GEOLOGY

The OS area is underlain by the contact of diorite, the predominant rock type, and a body of granite. These intrusives form part of the Late Triassic to Early Cretaceous Hogem Intrusive Complex which consists of numerous plutonic bodies of distinct age. This complex varies in composition between gabbro, diorite, monzonite, syenite and alkali feldspar syenite. The showing occurs near several small granite and lamprophyre dykes that intrude the diorite along the periphery of its contact with the granite.

Locally, the granites host minor quartz veins and stockworks which may contain disseminated pyrite, chalcopyrite and bornite. The diorite can host local minor quartz veins and stockworks; minor malachite and locally minor epidote and limonite alteration was observed. The diorite contains locally abundant magnetite while the granite contains none. The highest copper assay, taken from a weakly limonitic diorite with minor malachite stain, was 0.113 per cent (Assessment Report 21425).

BIBLIOGRAPHY

EMPR ASS RPT *21425
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A

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RUN TIME: 11:51:27

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BIBLIOGRAPHY

GSC MEM 274

DATE CODED: 1992/07/16
DATE REVISED: 1992/07/17

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 012**

NATIONAL MINERAL INVENTORY: 094C5 Ag1

NAME(S): **JUPITER, SILVER C, SUSIE,
 SARA, HEIDI-LAY**

STATUS: Prospect	Underground	MINING DIVISION: Omineca
REGIONS: British Columbia		UTM ZONE: 10 (NAD 83)
NTS MAP: 094C05W		NORTHING: 6261301
BC MAP:		EASTING: 328697
LATITUDE: 56 27 54 N		
LONGITUDE: 125 46 50 W		
ELEVATION: 1040 Metres		
LOCATION ACCURACY: Within 500M		
COMMENTS: Location of main adit (Assessment Report 6037).		

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Sphalerite	Tetrahedrite	Galena	Chalcopyrite	Pyrite
Covellite	Pyrrhotite			
ASSOCIATED: Quartz	Calcite			
ALTERATION: Chlorite	Carbonate	Serpentine	Graphite	
ALTERATION TYPE: Propylitic		Serpentin'zn		
MINERALIZATION AGE: Unknown				

DEPOSIT

CHARACTER: Vein	Breccia	Shear	Discordant
CLASSIFICATION: Epigenetic	Hydrothermal		
TYPE: I05	Polymetallic veins Ag-Pb-Zn±Au		

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	
Upper Paleozoic			Lay Range Assemblage

LITHOLOGY: Andesite
 Argillite
 Porphyritic Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane	Slide Mountain	PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel		

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1954
SAMPLE TYPE: Grab	
<u>COMMODITY</u>	<u>GRADE</u>
Silver	163.0000 Grams per tonne
Gold	4.6000 Grams per tonne
Copper	0.0800 Per cent
Zinc	0.6000 Per cent
REFERENCE: Geological Survey of Canada Memoir 274, page 219.	

CAPSULE GEOLOGY

The Jupiter property is located near the mouth of Berry Creek, on the north side of Lay Creek, four kilometres north of the west end of Aiken Lake and 105 kilometres northwest of Germansen Landing. The Jupiter showings are hosted by altered mafic volcanic rocks of the Upper Triassic Takla Group (Plughat Mountain Formation) which overlie a 1-kilometre section of black pyritic argillite of the Mississippian to Permian Lay Range assemblage (Fieldwork 1991, page 131; Assessment Report 6037). The andesitic hostrocks have been altered to chlorite and serpentine, and the argillite to soft, brecciated, graphitic material. A body of altered diorite porphyry is located near the entrance to the main adit. Two distinctive types of mineral deposits are present. The main structure (the No. 2 zone) is a north-striking, steeply west dipping brecciated fault zone cemented by white quartz and cream-coloured calcite containing considerable amounts of graphite and sparingly mineralized with pyrite. The best mineralized section is 30 metres long and a maximum of 60 centimetres in width. A grab sample assayed 4.6 grams per tonne gold, 163 grams per tonne silver, 0.08 per cent copper and 0.8 per cent zinc (Geological Survey of Canada Memoir

CAPSULE GEOLOGY

274). The second type of mineral deposit consists of well-defined fissure veins which strike northeast and northwest, containing quartz and calcite and heavily mineralized with sphalerite, tetrahedrite, galena and minor chalcopyrite, covellite and pyrrhotite. The two largest of the fissure veins, called the No. 1 and No. 3 veins range up to 30 centimetres in width. The No. 1 vein has been traced for a length of 32 metres.

The main showings on the west side of Berry Creek have been explored by a 242-metre long adit with several crosscuts. On the east side of Berry Creek, a 49-metre wide adit has explored a quartz-calcite vein weakly mineralized with sphalerite, pyrite, galena and tetrahedrite. The vein is lenticular and discontinuous and reaches a maximum width of 60 centimetres.

BIBLIOGRAPHY

EMPR ASS RPT 6037, 6607, 9201, 11251, 12110, 17457
EMPR PF (Assay plans, Consolidated Mining and Smelting Limited, 1934)
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
EMPR BULL 1, p. 18
EMPR EXPL 1976-E170
GSC MAP 1030A
GSC MEM *274, p. 218

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/10

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

plans, 1932). The showings have been explored by a small adit which has since caved.

A second area of mineralization located south of the adit, consists of lenses of massive sulphide up to 9 metres thick and 30 metres long. These bodies consist of pyrrhotite with minor pyrite and chalcopyrite associated with the Polaris fault.

A third area of mineralization north of the adit contains chalcopyrite and minor molybdenite in fractures in quartz monzonite and chalcopyrite in fractures in pyritized volcanic rocks.

BIBLIOGRAPHY

EMPR ASS RPT 6037, 6607, 9201, 11251, 12110, 17457
EMPR PF (Assay plans, Consolidated Mining and Smelting Limited, 1932)
EMPR BULL 1, p. 8
EMPR AR 1932-86; 1933-100
EMPR EXPL 1976-E170
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274, p. 221

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/13

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 014**

NATIONAL MINERAL INVENTORY: 094C6 Cu1

NAME(S): **HOPE** BLACK GOLD

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 22 21 N
LONGITUDE: 125 20 46 W
ELEVATION: 2100 Metres

NORTHING: 6250010
EASTING: 355104

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location is from Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Copper Tungsten

MINERALS

SIGNIFICANT:	Pyrrhotite	Pyrite	Arsenopyrite	Chalcopyrite	Scheelite
ALTERATION:	Hematite	Limonite			
ALTERATION TYPE:	Oxidation				
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER: Breccia Concordant Massive
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE

Hadrynian
Mesozoic

GROUP

Ingenika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

Wolverine Complex

LITHOLOGY: Quartz Mica Feldspar Gneiss
Massive Quartzite
Quartz Feldspar Actinolite Amphibolite

HOSTROCK COMMENTS: The Wolverine complex consists of metamorphosed Ingenika rocks and Cretaceous to Tertiary intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1988

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

0.2600

Per cent

Tungsten

0.2300

Per cent

COMMENTS: Highest assays for copper and tungsten from several samples.

REFERENCE: Assessment Reports 17743 and 17744.

CAPSULE GEOLOGY

The Hope property is located in a col at an elevation of about 2100 metres on the crest of a ridge 4 kilometres northeast of Blackpine Lake (Geological Survey of Canada Memoir 274, page 222).

Hostrocks are uniformly banded quartz-mica-feldspar gneiss, quartzite, and quartz-feldspar-actinolite amphibolite of the Wolverine Metamorphic Complex, metamorphic equivalents of the Hadrynian Ingenika Group.

The property covers a mineralized zone between 4 to 8 metres wide, and a hundred metres or more long. The mineralized zone consists of fragments up to 60 centimetres in diameter of gneiss and bluish grey, massive quartzite containing varying amounts of pyrrhotite, pyrite and arsenopyrite, with very minor chalcopyrite, as well as fragments of crystalline massive sulphides, all in a matrix of massive to crystalline pyrrhotite, massive hematite and earthy, friable limonite. In other parts of the deposit, bands of crystalline sulphide minerals occur along the foliation planes of the quartz-mica-feldspar schist. Assays of samples yielded only traces of gold and silver (Geological Survey of Canada Memoir 274, page 222). Scheelite has also been identified in the gossan (Exploration in British Columbia 1975, page E159). Grab samples assayed low in gold and silver and up to 0.26 per cent copper and 0.23 per cent

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CAPSULE GEOLOGY

tungsten (Assessment Reports 17743, 17744).

BIBLIOGRAPHY

EMPR ASS RPT *17743, *17744
EMPR EXPL 1975-E159
GSC MEM *274, p. 222
GSC MAP 1030A, 48-5A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/10

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 015**

NATIONAL MINERAL INVENTORY:

NAME(S): **STRANGER, DOLLY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 18 43 N
LONGITUDE: 125 24 37 W
ELEVATION: 1000 Metres

NORTHING: 6243409
EASTING: 350906

LOCATION ACCURACY: Within 500M

COMMENTS: Location from Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite

ASSOCIATED: Quartz Calcite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Paleozoic

GROUP

Big Creek

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Calcareous Slaty Black Argillite
Meta Volcanic
Tuff
Phyllite
Graphitic Schist

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Stranger property is located on Tutizika River, approximately 6 kilometres west of the confluence with the Mesilinka River, 95 kilometres northwest of Germansen Landing.

Hostrocks are locally calcareous, black slaty argillites recently assigned to the Late Devonian to Early Mississippian Big Creek Group (Open File 1993-2). Other lithologies in the area include mafic volcanic rocks, dark green tuffs, phyllite and graphitic schist (Assessment Report 17442).

Mineralization consists of a network of narrow quartz and quartz-calcite veins (Geological Survey of Canada Memoir 274, page 222) sparsely mineralized with pyrite and chalcopyrite (Assessment Report 17442). The largest single vein is about 10 centimetres wide, but in one place an aggregate width of 60 centimetres of vein material occurs over a width of 3 metres of rock (Geological Survey of Canada Memoir 274, page 222).

BIBLIOGRAPHY

EMPR ASS RPT *17442
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM *274, p. 222
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/11

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 016**

NATIONAL MINERAL INVENTORY: 094C4 Cu2

NAME(S): **CHIEF THOMAS**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 13 N
LONGITUDE: 125 44 20 W
ELEVATION: 2300 Metres

NORTHING: 6232117
EASTING: 330105

LOCATION ACCURACY: Within 500M

COMMENTS: Location from Assessment Report 17743, page 5.

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Pyrite Specularite
ASSOCIATED: Quartz
ALTERATION: Malachite Hematite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
DIMENSION: 100 x 3 Metres STRIKE/DIP: 140/90 TREND/PLUNGE:
COMMENTS: The dimensions are the maximum known for the vein.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Mesozoic Hogem Intrusive Complex

LITHOLOGY: Gneissic Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 9.3000 Grams per tonne
Gold 0.5000 Grams per tonne
Copper 1.0000 Per cent

REFERENCE: Geological Survey of Canada Memoir 274, page 223.

CAPSULE GEOLOGY

The Chief Thomas prospect is located on the south side of a peak located east of Etschitka Creek, approximately 80 kilometres northwest of Germansen Landing.

The showing consists of a single quartz vein (Geological Survey of Canada Memoir 274, page 223) in slightly gneissic quartz diorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex (Fieldwork 1992, page 131). The vein is 2 to 3 metres wide, and at least 100 metres long. It strikes 140 degrees, dipping vertically (Assessment Report 17743). Sulphide minerals (bornite, chalcopyrite and pyrite) are disseminated throughout the vein, particularly on the west side. In one area, 30 centimetres of vein and 45 centimetres of wallrock on the west side of the vein are highly decomposed and heavily impregnated with malachite (Geological Survey of Canada Memoir 274, page 223). The vein is vuggy and contains much dark red specular hematite, with limonite boxworks well developed in places. One sample assayed 0.5 gram per tonne gold, 9.3 grams per tonne silver and about 1 per cent copper (Geological Survey of Canada Memoir 274, page 233).

BIBLIOGRAPHY

EMPR ASS RPT 17743
EMPR FIELDWORK 1992-1, pp. 127-146
GSC MEM 274-202,223

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BIBLIOGRAPHY

GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/25

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 017**

NATIONAL MINERAL INVENTORY: 094C4 Au1

NAME(S): **ELIZABETH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 13 13 N
LONGITUDE: 125 42 40 W
ELEVATION: 1850 Metres

NORTHING: 6233903
EASTING: 331901

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location from Map 1030A, Geological Survey of Canada Memoir 274.

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Unknown
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Granodiorite
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Elizabeth showing is located near the head of the east branch of Etschitka Creek, 80 kilometres northwest of Germansen Landing (Geological Survey of Canada Memoir 274, page 223). The showing is a "shear zone" in granodiorite and quartz diorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex (Fieldwork 1992, page 131). Abundant quartz and quartz-carbonate veins in two intersecting sets are reported (Geological Survey of Canada Memoir 274, page 223). One vein is reported to have provided fairly consistent, but low, assays in gold and silver (Geological Survey of Canada Memoir 274, page 223).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM *274, pp. 202,223
GSC MAP 1030A
EMR MP CORPFILE (Bethlehem Copper Corp. Ltd. Annual Reports)

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/25

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 018**

NATIONAL MINERAL INVENTORY: 094C4 Cu1

NAME(S): **MATETLO, KAM**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 26 N
LONGITUDE: 125 36 48 W
ELEVATION: 1940 Metres

NORTHING: 6232216
EASTING: 337907

LOCATION ACCURACY: Within 500M

COMMENTS: Vein exposure on ridge crest (Property File - Nevin, A.E. 1971).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Epidote
ALTERATION: Epidote Malachite Azurite Chrysocolla Limonite
ALTERATION TYPE: Epidote Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Regular
MODIFIER: Fractured
DIMENSION: 40 Metres STRIKE/DIP: 310/85N TREND/PLUNGE:
COMMENTS: A fracture zone up to 40 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Hogem Intrusive Complex

LITHOLOGY: Granodiorite
Granite
Syenite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1971
SAMPLE TYPE: Chip
COMMODITY GRADE
Copper 2.1800 Per cent
COMMENTS: Chip sample across a 1-metre wide vein.
REFERENCE: Assessment Report 3342.

CAPSULE GEOLOGY

The Matetlo occurrence is exposed on a ridge crest at the headwaters of Matetlo Creek, 95 kilometres northwest of Germansen Landing.

The occurrence consists of a series of veins in a fracture zone, across 40 metres of Late Triassic to Early Cretaceous Hogem Intrusive Complex granodiorite, granite and syenite. The fracture zone, striking 310 degrees and dipping 85 degrees north, hosts at least five quartz veins, each up to 25 centimetres wide, containing massive coarse-grained pyrite with chalcopyrite. Epidote, malachite, azurite and chrysocolla occur as vein selvages and are disseminated in granodiorite between fractures. A chip sample across a 1-metre wide vein analyzed 2.18 per cent copper (Assessment Report 3342).

BIBLIOGRAPHY

EMPR ASS RPT *3342, 14192
EMPR GEM 1971-60
EMPR PF (*Nevin, A.E. (1971): Report on the Kam Claims)
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274, p. 224

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GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/25

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 019**

NATIONAL MINERAL INVENTORY: 094C3 Au1

NAME(S): **PLUTO**, THANE 1

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 08 24 N
LONGITUDE: 125 24 11 W
ELEVATION: 1400 Metres

NORTHING: 6224262
EASTING: 350685

LOCATION ACCURACY: Within 500M

COMMENTS: Trenches in shear zone on both sides of Pluto Creek (Assessment Report 9242).

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Arsenopyrite Pyrite Magnetite Specularite Chalcopyrite

COMMENTS: Lenses of massive sulphides in shear zones.

ASSOCIATED: Calcite Quartz

COMMENTS: Quartz-carbonate veins healing fracture zones.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Podiform Massive
CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

DIMENSION: 10 x 3 x 1 Metres STRIKE/DIP: 290/70N TREND/PLUNGE:

COMMENTS: A 10 by 3 by 1-metre fracture zone oriented 290/70NE.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Mesozoic	Takla	Plughat Mountain	Hogem Intrusive Complex

LITHOLOGY: Andesite
Basalt

HOSTROCK COMMENTS: Andesitic and basaltic volcanic rocks adjacent to the Hogem batholith host copper and gold mineralization.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Quesnel

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE:

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1954

SAMPLE TYPE: Grab

COMMODITY

GRADE

Gold 13.7000 Grams per tonne

COMMENTS: Gold is associated with an arsenopyrite-bearing sulphide lens.

REFERENCE: Geological Survey of Canada Memoir 274, page 224.

CAPSULE GEOLOGY

The Pluto occurrence is located on the banks of Pluto Creek which flows into Thane Creek, 11 kilometres northwest of Uslika Lake and approximately 200 kilometres northwest of Fort St. James.

The occurrence lies centrally within the Omineca Belt in the Quesnel Terrane. Upper Triassic Plughat Mountain Formation andesitic and basaltic volcanic rocks of the Upper Triassic to Early Jurassic Takla Group host copper and gold mineralization. Numerous faults, fractures and shears occur within the Takla rocks adjacent to the contact with the Late Triassic to Lower Cretaceous Hogem Intrusive Complex.

The fracture zones, up to 1 metre wide and healed with quartz-carbonate mineralization, locally contain lenses, up to 3 metres in width and 15 metres in length, of massive arsenopyrite, pyrite, magnetite, specularite and minor chalcopyrite. A grab sample of an arsenopyrite-bearing massive sulphide lens assayed 13.7 grams per tonne gold (Geological Survey of Canada Memoir 274, page 224). The fractures dominantly strike 290 degrees and dip 70 degrees north.

The showing appears continuous with the Thane occurrence (094C

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RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 93
REPORT: RGEN0100

CAPSULE GEOLOGY

020), 2 kilometres south.

BIBLIOGRAPHY

EMPR ASS RPT *9242, 11252, 13583, 15139
EMPR EXPL 1982-322
EMPR FIELDWORK 1991, pp.127-145
EMPR OF 1992-11
EMPR BULL 1, p. 26
GSC MEM *274, p. 224
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/19

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 020**

NATIONAL MINERAL INVENTORY: 094C3 Cu1

NAME(S): **THANE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 18 N
LONGITUDE: 125 23 23 W
ELEVATION: 1210 Metres

NORTHING: 6222194
EASTING: 351443

LOCATION ACCURACY: Within 500M

COMMENTS: Trenches on a bank of a tributary directly above the confluence with Thane Creek (Assessment Report 9242).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Magnetite Specularite

COMMENTS: Pods of sulphides occur along fractures.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive Podiform Shear

CLASSIFICATION: Hydrothermal Epigenetic

DIMENSION:

STRIKE/DIP: 290/70N TREND/PLUNGE:

COMMENTS: Fractures trend north along a creek.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Mesozoic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Andesite
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Quesnel

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Zeolite

CAPSULE GEOLOGY

The Thane occurrence is located at the confluence of Pluto and Thane creeks, 10 kilometres northwest of Uslika Lake and approximately 200 kilometres northwest of Fort St. James. The occurrence lies centrally within the Omineca Belt in the Quesnel Terrane.

Upper Triassic Plughat Mountain Formation andesitic and basaltic volcanic rocks of the Upper Triassic to Lower Jurassic Takla Group host copper and gold mineralization. Fault, fracture and shear zones up to 1 metre wide, within the Takla rocks adjacent to the Late Triassic to Early Cretaceous Hogem Intrusive Complex, carry disseminated and massive pods of chalcopyrite, pyrite, magnetite and specularite.

The showing appears to be continuous with the Pluto occurrence (094C 019), 2 kilometres north.

BIBLIOGRAPHY

EMPR ASS RPT *9242, 11252, 15139
EMPR AR 1940-28; 1954-64
EMPR EXPL 1982, p. 322
EMPR OF 1992-11
EMPR FIELDWORK 1991, 127-145
GSC MEM 274, p. 224
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/20

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 021**

NATIONAL MINERAL INVENTORY: 094C3 Cu2

NAME(S): **VEGA**, BEG, RON

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

Underground

MINING DIVISION: Omineca

LATITUDE: 56 09 22 N
LONGITUDE: 125 19 18 W
ELEVATION: 1200 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6225882
EASTING: 355802

LOCATION ACCURACY: Within 500M

COMMENTS: Portal of adit on the south bank of Vega Creek (Assessment Report 18044).

COMMODITIES: Copper Gold Mercury

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Cinnabar Pyrite
COMMENTS: Fine-grained disseminated sulphides locally fill fractures.
ALTERATION: Calcite Chlorite Epidote K-Feldspar Biotite
Hematite Chalcedony Silica
ALTERATION TYPE: Propylitic Potassic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia Vein Shear
CLASSIFICATION: Porphyry Epigenetic Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: STRIKE/DIP: 015/65S TREND/PLUNGE:
COMMENTS: Attitude of shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Andesitic Breccia
Brecciated Siliceous Calcareous Andesite
Syenite Dike
Syeno Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE:

CAPSULE GEOLOGY

The Vega copper-gold occurrence is on Vega Creek, eight kilometres northwest of Usilika Lake and 200 kilometres northwest of Fort St. James.

The occurrence consists of disseminated chalcopyrite, bornite and pyrite in andesitic breccias of the Upper Triassic to Lower Jurassic Takla Group. Syenite and syenodiorite dykes associated with the Upper Jurassic to Lower Cretaceous Hogem Intrusive Complex intrude the volcanic pile. The volcanic assemblage is propylitically altered, consisting of calcite, epidote, chlorite, hematite and quartz. Secondary biotite and pink feldspar and chalcedony veinlets locally filling fractures indicate a potassic overprint. A major north to northwest trending shear zone within calcareous and siliceous andesite breccia contains disseminated cinnabar.

Work in the 1930s concentrated on copper and gold mineralization related to a major northwest-trending fault. Underground workings totalled 200 metres. A 200-metre long trench, 1200 metres south of an adit on Vega Creek, exposed propylitically altered andesite breccia containing disseminated chalcopyrite. Work during the 1970s examined the copper porphyry potential of the property. Six metres of drill core averaged 0.05 gram per tonne gold (Assessment Report 18044).

BIBLIOGRAPHY

EMPR ASS RPT 587, 5257, 5258, 5259, 5663, 5896, 5930, 5940, 6120, 6401
16335, *18044

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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REPORT: RGEN0100

BIBLIOGRAPHY

EMPR OF 1992-11
EMPR FIELDWORK 1991, pp. 127-145
EMPR GEM 1974-291
EMPR EXPL 1975-157
EMPR BULL 1, p. 25
GSC MEM 274, pp. 274-225
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/06

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 022**

NATIONAL MINERAL INVENTORY: 094C3 Ag1

NAME(S): **RUBY**, IVAN, JIM,
MAY, OK, CABIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 56 13 12 N
LONGITUDE: 125 04 44 W
ELEVATION: 1460 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6232510
EASTING: 371093

LOCATION ACCURACY: Within 500M
COMMENTS: Quartz vein on the west bank of a tributary to Jim May Creek
(Assessment Report 17458).

COMMODITIES: Silver Lead Zinc Copper Gold
Molybdenum

MINERALS

SIGNIFICANT: Galena Pyrite Argentite Chalcopyrite Molybdenite
Sphalerite Tetrahedrite Pyrargyrite Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 055/65S TREND/PLUNGE:
COMMENTS: Shear zone orientation.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic Ingenika Swannell

LITHOLOGY: Quartzite
Siliceous Sericite Schist

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

CAPSULE GEOLOGY

The Ruby occurrence is located at the headwaters of Jim May Creek near the western edge of the Omineca Belt, approximately 50 kilometres northwest of Germansen Landing.

The occurrence is hosted in a shear within Upper Proterozoic Swannell Formation (Ingenika Group) grey quartzite and siliceous sericite schist. Narrow quartz veins occur within a one-metre wide brecciated fault or shear zone striking 55 degrees and dipping 60 degrees south.

Disseminated galena, pyrite, argentite and minor amounts of chalcopyrite, molybdenite, sphalerite, tetrahedrite, pyrargyrite and arsenopyrite have been recognized in hand specimens.

BIBLIOGRAPHY

EMPR AR 1930-152; 1952-100
EMPR GEM 1967-120; 1968-150
EMPR ASS RPT *17458
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274, p. 226
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/06

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 023**

NATIONAL MINERAL INVENTORY: 094C3 Pb1

NAME(S): **BEVELEY**, WASI LAKE, BULLSEYE,
BULLSEYE WEST, DONNA, ROBIN,
O, G, E,
C, Y

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 56 08 49 N
LONGITUDE: 125 03 30 W
ELEVATION: 1080 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6224342
EASTING: 372124

LOCATION ACCURACY: Within 500M

COMMENTS: Bullseye zone, 750 metres north of Osilinka River and 7 kilometres
north of Wasi Lake, 200 kilometres north of Fort St. James (Assessment
Report 8734).

COMMODITIES: Lead Zinc Silver

MINERALS

SIGNIFICANT: Galena Sphalerite Pyrite Acanthite Tetrahedrite
ASSOCIATED: Dolomite Barite Calcite
ALTERATION: Dolomite Silica
ALTERATION TYPE: Carbonate Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein Disseminated Stratabound
CLASSIFICATION: Replacement Epigenetic
TYPE: E13 Irish-type carbonate-hosted Zn-Pb
SHAPE: Irregular
MODIFIER: Fractured Sheared
DIMENSION: 1500 x 500 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Surface area containing several mineralized zones.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cambrian Paleozoic	Atan Echo Lake	Mount Kison Undefined Formation	

LITHOLOGY: Dolomite Breccia
Dolomite
Limestone
Limy Argillite
Phyllite
Sericite Schist
Ferro Dolomite

HOSTROCK COMMENTS: The Echo Lake Group is Middle Ordovician to Lower Devonian. The
Cambrian to Ordovician Razorback Group also underlies area.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: WASI LAKE REPORT ON: Y

CATEGORY: Inferred	YEAR: 1969
QUANTITY: 2721300 Tonnes	
COMMODITY	GRADE
Silver	36.3000 Grams per tonne
Lead	3.6600 Per cent

COMMENTS: Grade given as 3.66 per cent lead-zinc in 3 zones.
REFERENCE: Northern Miner - December 7, 1978.

CAPSULE GEOLOGY

1978).

BIBLIOGRAPHY

EMPR OF 1992-1; 1992-11; 1993-2
EMPR FIELDWORK 1978, p. 97; 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR BULL 1
EMPR MAP 65 (1989)
EMPR ASS RPT 1080, 5008, 6618, 7546, 7611, *8734
EMPR AR 1950-A101; 1951-A118; 1952-A98-A102; 1967-120; 1968-149
EMPR GEM 1969-105; *1973-390-395
EMPR EXPL 1976-E169; 1977-E212; 1978-E240; 1980-415
EMPR PF (White, G.P.E. (1967): Report on Donna Mines Ltd.; Hall, R. (1966): Report on property activity; Davies, G. and Davies E. (1947): Prospecting report; Roots, E.F. (1947): Property description; Fahrni, K.C. (1979): Report for MEIP grant on the Wasi Lake Project)
GSC MAP 787A; 1030A
GSC P 48-5; 75-33; 75-1A
GSC MEM 274, p. 228
EMR MP CORPFILE (Donna Mines Ltd.; Suzie Mining Exploration Ltd.)
N MINER May 31, 1979
GCNL #215,#193,#200, 1977; #136(Jul.17),#212,#231,#239(Dec.13),#192,#67, 1978; #241,#220,#231,#211,#214,#159,#79, #136,#141,#48, 1979; #184, 1980
Lefebure, D.V. (1974): The Beveley Property, A Lead-Silver Prospect in North-Central British Columbia, Unpub. B.Sc. Thesis, Queen's University
EMR MIN BULL MR 223 B.C. 259
EMPR OF 1998-10
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/11

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 024**

NATIONAL MINERAL INVENTORY: 094C3 Zn1

NAME(S): **PAR, WEBER**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 32 N
LONGITUDE: 125 01 34 W
ELEVATION: 840 Metres

NORTHING: 6221903
EASTING: 374056

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for the original Weber workings located about 1.5 kilometres south of the Osilinka River, near the east side of Wasi Creek (Assessment Report 21211, Plate 90-3). There has been some confusion between the Weber occurrence and the Carie claim mineralization (094C 130), the main showing of which lies to the southwest.

COMMODITIES: Zinc Lead Gold Silver

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite
ASSOCIATED: Barite Dolomite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated Podiform Massive
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cambrian	Atan	Mount Kison	
Ordovician-Silurian	Razorback	Undefined Formation	

LITHOLOGY: Carbonate
Dolomite
Limestone
Shale
Phyllite
Argillite

HOSTROCK COMMENTS: Mineralization also occurs in Middle Devonian Otter Lakes and Middle Ordovician to Lower Devonian Echo Lake groups carbonates.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Chip
COMMODITY GRADE
Lead 1.1000 Per cent
Zinc 3.2000 Per cent

COMMENTS: From an 18-metre chip sample in Trench 3.
REFERENCE: Assessment Report 21809.

CAPSULE GEOLOGY

The area of the Par prospect is underlain by a north-trending carbonate sequence comprising the Lower Cambrian Mount Kison Formation (Atan Group) and the Ordovician to Middle Devonian Razorback, Echo Lake and Otter Lakes groups. This sequence, interbedded with thin horizons of shale, argillite and coarse-grained clastics, overlies basal orthoquartzite, siltstone, sandstone and shale of the Mount Brown Formation (Atan Group) and is overlain by 400 to 500 metres of Big Creek Group shales.

Four forms of mineralization have been reported as follows (Assessment Report 21809, page 5):

- (1) The Weber showing, comprising dolomite-hosted replacement-type pyrite, galena, sphalerite and barite is stratigraphically inferred to occur within the Mount Kison Formation. The minerals occur as disseminations and "seams" several centimetres

CAPSULE GEOLOGY

- wide. A sample taken across 5.18 metres from an opencut assayed 0.69 gram per tonne gold, 34.29 grams per tonne silver, 1.6 per cent lead and 3.6 per cent zinc (Minister of Mines Annual Report 1930, page 153).
- (2) Trenching on the property revealed thin lenses (less than 0.4 metre) of 60 to 80 per cent sulphide rock intercalated with shales, phyllites and dolomite boudins of the Cambrian to Ordovician Razorback Group. Three trenches, in line and up to 800 metres to the southeast of the Weber showing, yielded the following results: i) 6.7 per cent lead and 2.5 per cent zinc over 4 metres (Trench 1); ii) 1.1 per cent lead and 3.2 per cent zinc over 18 metres (Trench 3) and; iii) 6.1 per cent lead and 3.4 per cent zinc over 1 metre (Trench 5) (Assessment Report 21809).
 - (3) Galena, sphalerite and barite associated with secondary dolospar veining is evident throughout the dolomite of the Middle Devonian Otter Lakes Group.
 - (4) Middle Ordovician to Lower Devonian Echo Lake Group carbonates were found to host galena and sphalerite as pods and small (less than 0.5 by less than 0.1 metre), thin, low-grade lenses of solution-etching and replacement-type deposits.

BIBLIOGRAPHY

EMPR AR *1930-153; 1952-98,99,105
EMPR ASS RPT 7611, *21211, *21809, 22362, 22612, 23094, 23732
EMPR OF 1990-17; 1992-11; 1993-2; 1994-1
EMPR FIELDWORK 1990, pp. 101-114; *1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR INF CIRC 1993-13
GSC MEM *274, p. 228
GSC MAP 1030A

DATE CODED: 1975/01/01
DATE REVISED: 1992/06/08

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **INGENIKA RIVER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C13E
BC MAP:

LATITUDE: 56 47 11 N
LONGITUDE: 125 41 00 W
ELEVATION: 730 Metres

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from Geological Survey of Canada Map 1030A (Memoir 274, page 199).

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

NORTHING: 6296820
EASTING: 336084

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated

CLASSIFICATION: Placer

TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Hadrynian	Ingenika	Tsaydiz	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Gravel
Sericitic Phyllite
Limestone
Grit

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The main Ingenika River placer gold occurrence is located between Wrede and Pelly creeks (Geological Survey of Canada Memoir 274, Map 1030A, page 199), approximately 130 kilometres northwest of Germansen Landing.

No official production figures are available, however according to Memoir 274 (page 199) "the most productive stretch of the river has been that part between the mouths of Wrede and Pelly creeks". Bedrock in the area consists of sericitic phyllites with interbeds of limestone and grit of the Hadrynian Tsaydiz Formation, Ingenika Group (Geological Survey of Canada Paper 77-19, page 3). Fine gold was also reported to occur in the wash at the mouth of the river (Geological Survey of Canada Annual Report 1894, Volume VII, page 16C).

BIBLIOGRAPHY

GSC MEM *274, p. 199
GSC MAP 1030A
GSC P 77-19, p. 3
GSC AR 1894, Vol. VII, p. 16C

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/24

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 026**

NATIONAL MINERAL INVENTORY: 094C3 Au2

NAME(S): **JIM MAY CREEK**, JIMMAY CREEK

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

Open Pit

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 08 N
LONGITUDE: 125 10 40 W
ELEVATION: 1130 Metres

NORTHING: 6230721
EASTING: 364899

LOCATION ACCURACY: Within 500M

COMMENTS: Location of creek "gorge" (Bulletin 1, page 29).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Hadrynian
Quaternary
Unknown

GROUP

Ingenika

FORMATION

Swannell

IGNEOUS/METAMORPHIC/OTHER

Glacial/Fluvial Gravels
Unnamed/Unknown Informal

LITHOLOGY: Gravel
Quartz Muscovite Schist
Quartz Biotite Schist
Granite

HOSTROCK COMMENTS: A granitic stock of unknown affinity is reported.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Jim May Creek placer gold property is on Jim May Creek, a tributary of Tenakihi Creek, 57 kilometres northwest of Germansen Landing.

Bedrock in the area consists of silicified quartz muscovite schists and quartz biotite schists of the Hadrynian Swannell Formation, Ingenika Group cut by a number of small unmineralized quartz veins up to 0.5 metre in width and intruded by a small stock of granitic rock which is exposed in the creek for approximately 50 metres (Bulletin 1, page 30). The paystreak lies in gravels up to 3.6 metres above bedrock and appears to represent mainly re-sorted glacial debris.

Between 1881 and 1885, 871 grams of gold were recovered and between 1936 and 1940, 1866 grams were produced; total recorded production was 2737 grams (Bulletin 28). In 1939, a nugget weighing 58.3 grams was recovered from the workings (Bulletin 1, page 31).

BIBLIOGRAPHY

EMPR BULL *1 (Lay, 1940), pp. 29-32; *28, p. 45
EMPR AR 1899-636; 1932-87; 1935-C29
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MAP 1030A
GSC MEM 274, p. 199

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/20

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 027**

NATIONAL MINERAL INVENTORY: 094C3 Au2

NAME(S): **OMINECA RIVER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 05 34 N
LONGITUDE: 124 31 43 W
ELEVATION: 690 Metres

NORTHING: 6217459
EASTING: 404897

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located on the Omineca River, downstream from its confluence with the Osilinka River (Geological Survey of Canada Annual Report 1963, page 131).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Proterozoic	Ingenika	Swannell	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Fluvial Glacial Gravel
Shale
Phyllite
Feldspathic Wacke
Limestone
Schist
Gneiss

HOSTROCK COMMENTS: Alluvial gravels along the Omineca River.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

CAPSULE GEOLOGY

The Omineca River placer occurrence is located on the western edge of the Omineca Belt approximately 200 kilometres northwest of Fort St. James.

Placer gold is hosted in unconsolidated gravels along the Omineca River, downstream from the junction with the Osilinka River. There is no recorded recovery, but old workings are reported on bars and alluvial benches. The underlying bedrock consists of Proterozoic Ingenika Group, Swannell Formation rock generally composed of shale, phyllite, feldspathic wacke, limestone, garnetiferous schists and gneiss.

BIBLIOGRAPHY

EMPR AR *1963-131
EMPR FIELDWORK 1992, pp. 109-134
EMPR BULL 91
GSC ANN RPT 1894 VOL VII

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/04

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **VEGA CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 06 50 N
LONGITUDE: 125 14 02 W
ELEVATION: 920 Metres

NORTHING: 6221004
EASTING: 361101

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location from Geological Survey of Canada Map 1030A, Memoir 274, page 199.

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated

CLASSIFICATION: Placer

TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Lower Cretaceous
Triassic-Jurassic
Upper Paleozoic

GROUP

Unnamed/Unknown Group
Takla

FORMATION

Unnamed/Unknown Formation
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

Lay Range Assemblage

LITHOLOGY:

Gravel
Sand
Sediment/Sedimentary
Mafic Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

A placer gold occurrence is reported near the mouth of Vega Creek, approximately 50 kilometres northwest of Germansen Landing.

Bedrock underlying Vega Creek includes Lower Cretaceous sediments, Upper Paleozoic rocks of the Lay Range assemblage, and mafic volcanic rocks of an unnamed Upper Triassic to Lower Jurassic unit of the Takla Group. Production from the creek is reported to be "small" (Geological Survey of Canada Memoir 274).

BIBLIOGRAPHY

GSC MEM 274, p. 199
GSC MAP 1030A
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11

DATE CODED: 1985/07/24
DATE REVISED: 1991/02/24

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 029**

NATIONAL MINERAL INVENTORY: 094C2 Pb1

NAME(S): **CHILDHOOD DREAM**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

Underground

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 10 05 N
LONGITUDE: 124 54 36 W

NORTHING: 6226426
EASTING: 381403

ELEVATION: 980 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Showing on the east bank of a creek, 1600 metres north of its confluence with the Osilinka River (Minister of Mines Annual Report 1952, page 98).

COMMODITIES: Zinc Lead Silver Gold

MINERALS

SIGNIFICANT: Galena Sphalerite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Breccia Disseminated Massive
CLASSIFICATION: Replacement Hydrothermal
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: 8 Metres STRIKE/DIP: 075/25N TREND/PLUNGE:
COMMENTS: The main shear zone orientation.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	
Middle Devonian	Otter Lakes	Undefined Formation	

LITHOLOGY: Limestone
Coarse Grained Limestone
Dolomitic Limestone
Breccia
Sandy Dolomite
Argillaceous Dolomite
Calcareous Slate

HOSTROCK COMMENTS: The Cambro-Ordovician Razorback Group is also part of the host sequence. The Echo Lake Group is Middle Ordovician to Early Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Ancestral North America Slide Mountain
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1930
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 24.0000 Grams per tonne
Gold 0.3428 Grams per tonne
Lead 2.6000 Per cent
Zinc 11.2000 Per cent

COMMENTS: Across 1.8 metres of the main shear zone.
REFERENCE: Minister of Mines Annual Report 1930, page 52.

CAPSULE GEOLOGY

The Childhood Dream prospect is located on the western edge of the Omineca Belt within para-autochthonous rocks of North American craton affinity. The showing is located south of the Osilinka River approximately 180 kilometres northwest of Fort St. James.

A Cambrian to Middle Devonian package consisting of the Razorback (Kechika and Road River group equivalents), Echo Lake (Sandpile Group equivalent) and Otter Lakes (McDame Group equivalent) groups comprise a regional northwest-plunging anticline offset by faults and local drag folds. Sandy and argillaceous dolomite, massive limestone and minor calcareous slate comprise this Lower Paleozoic sequence.

CAPSULE GEOLOGY

Massive to coarse-grained pyrite with disseminated galena and sphalerite occur as replacement and breccia infillings near a steeply-dipping fault within coarse crystalline limestone of the Middle Ordovician to Early Devonian Echo Lake Group.

Two exploration adits, one 10 metres long within a shear zone striking 115 degrees and dipping 70 degrees northeast, the other 5 metres long within a rusty shear striking 075 degrees and dipping 25 degrees north, exposed pyrite and galena in dolomitic limestone. A 1.8-metre chip sample from the shear zone, 8 metres wide, assayed 0.3428 gram per tonne gold, 24.0 grams per tonne silver, 2.6 per cent lead and 11.2 per cent zinc (Minister of Mines Annual Report 1930, page 152).

BIBLIOGRAPHY

EMPR AR *1930-152; 1952-98,103
EMPR GEM 1973-390
EMPR FIELDWORK 1989, pp. 101-114; 1991, pp. 127-145; 1992, pp. 109-134
EMPR OF 1990-17; 1993-2
EMPR BULL 91
GSC MEM 274, p. 200
GCNL #190(Oct.4), 2000

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/04

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 030**

NATIONAL MINERAL INVENTORY: 094C2 Zn1

NAME(S): **DAVIES (ELIZABETH)**, ELIZABETH, ALFIE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 09 02 N
LONGITUDE: 124 55 25 W
ELEVATION: 950 Metres

NORTHING: 6224502
EASTING: 380504

LOCATION ACCURACY: Within 500M

COMMENTS: Trenching and stripping on the hillside above the tributary of the Osilinka River (Assessment Report 8324).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
ASSOCIATED: Barite Dolomite Calcite
COMMENTS: Barite replacement within dolomite.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Replacement Sedimentary
SHAPE: Tabular
COMMENTS: The strike and dip of the faults change directions across the showing.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	
Middle Devonian	Otter Lakes	Undefined Formation	

LITHOLOGY: Massive Limestone
Sandy Dolomite
Argillaceous Dolomite
Calcareous Slate

HOSTROCK COMMENTS: The host is predominantly limestone of the Middle Ordovician to Early Devonian Echo Lake Group (equivalent to the Sandpile Group).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Ancestral North America Cassiar

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1951
SAMPLE TYPE: Chip
COMMODITY: Zinc GRADE: 2.0000 Per cent

COMMENTS: From a 15-metre trench sample.
REFERENCE: Assessment Report 72.

CAPSULE GEOLOGY

The Davies (Elizabeth) showing is located on the western edge of the Omineca Belt within para-autochthonous rocks of North American craton affinity. The showing is located on a hillside above a north-flowing tributary to the Osilinka River, approximately 180 kilometres northwest of Fort St. James.

A Cambrian to Middle Devonian package consisting of the Razorback (Kechika and Road River group equivalents), Echo Lake (Sandpile Group equivalent) and Otter Lakes (McDame Group equivalent) groups comprise a regional northwest-plunging anticline which is offset by faults and local drag folds. Sandy and argillaceous dolomite, massive limestone and minor calcareous slate comprise this Lower Paleozoic sequence.

Sphalerite with minor galena and barite are hosted predominantly in limestone of the Middle Ordovician to Lower Devonian Echo Lake Group. Accessory minerals are dolomite and calcite. A 15-metre trench sample assayed 2 per cent zinc (Assessment Report 72).

BIBLIOGRAPHY

EMPR AR 1951-118; 1952-98,103; 1953-94; 1958-74

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 110
REPORT: RGEN0100

BIBLIOGRAPHY

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EMPR ASS RPT 71, *72, 1654, 5937, 6485, *8324, 19940, 20456, 20576,
21914
EMPR FIELDWORK 1989, pp. 101-114; 1991, pp. 127-145; 1992, pp.109-134
EMPR BULL 91
EMPR OF 1990-17; 1993-2
GSC MEM 274, p. 201

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/01

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 031**

NATIONAL MINERAL INVENTORY: 094C2 Zn1

NAME(S): **MOLLY, DAVIES, SWET,
DONNA 23, ALFIE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 08 30 N
LONGITUDE: 124 55 58 W
ELEVATION: 1225 Metres

NORTHING: 6223529
EASTING: 379907

LOCATION ACCURACY: Within 500M

COMMENTS: Stripped area on the hillside, southeast of the Gwynn showing (094C 032) (Minister of Mines Annual Report 1952, page 104).

COMMODITIES: Zinc Silver Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite
COMMENTS: Sphalerite and barite with minor galena occur parallel to bedding and in matrix of breccia zones.

ASSOCIATED: Barite Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia Layered
CLASSIFICATION: Replacement Sedimentary
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Tabular

DIMENSION: STRIKE/DIP: 025/40N TREND/PLUNGE:
COMMENTS: Bedding strikes 010 to 040 degrees and dips 40 degrees northwest. Joints parallel to the bedding strike 045 degrees and dip 60 degrees southeast.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	
Middle Devonian	Otter Lakes	Undefined Formation	

LITHOLOGY: Limestone
Limestone Breccia
Sandy Dolomite
Argillaceous Dolomite
Calcareous Slate

HOSTROCK COMMENTS: The Cambro-Ordovician Razorback Group is also part of the host sequence. The Echo Lake Group is Middle Ordovician to Lower Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Ancestral North America Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Zeolite

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1951
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 20.0000 Grams per tonne
Lead 0.0150 Per cent
Zinc 6.0000 Per cent

COMMENTS: Across 4 metres.
REFERENCE: Assessment Report 72.

CAPSULE GEOLOGY

The Molly showing is located on the western edge of the Omineca Belt within para-autochthonous rocks of North American craton affinity. The showing is located on a hillside above a north-flowing tributary to the Osilinka River, approximately 180 kilometres northwest of Fort St. James.

A Cambrian to Middle Devonian package consisting of the Razorback (Kechika and Road River group equivalents), Echo Lake (Sandpile Group equivalent) and Otter Lakes (McDame Group equivalent) groups comprise a regional northwest-plunging anticline which is

CAPSULE GEOLOGY

offset by faults and local drag folds. Sandy and argillaceous dolomite, massive limestone and minor calcareous slate comprise this Lower Paleozoic sequence.

The Molly occurrence is exposed in several trenches and pits. Bedrock is composed of dark grey to black limestone with an average strike of 025 degrees and a dip of 40 degrees northwest. Sphalerite and barite with minor galena, quartz, calcite and pyrite occur as disseminations in irregular patches replacing the limestone. Locally, the mineralization occurs conformable to bedding and within the matrix of breccia zones. A 4-metre chip sample from a trench assayed 6 per cent zinc, 0.015 per cent lead and 20 grams per tonne silver (Assessment Report 72).

BIBLIOGRAPHY

EMPR AR 1951-118; *1952-98,103; 1953-94; 1958-74
EMPR EXPL 1976-E168
EMPR BULL 91
EMPR ASS RPT 71, *72, 1654, 5937, 6485, 8324
EMPR FIELDWORK 1989, pp. 101-114; 1991, pp. 127-145; 1992,
pp. 109-134
EMPR OF 1990-17; 1993-2
GSC MEM 274, p. 201

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/01

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 032**

NATIONAL MINERAL INVENTORY: 094C2 Zn1

NAME(S): **GWYNN, DAVIES, SWET,
DONNA 21, ALFIE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 56 08 37 N
LONGITUDE: 124 55 30 W
ELEVATION: 1300 Metres

UTM ZONE: 10 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6223732
EASTING: 380396

COMMENTS: Outcrop trenched on the hillside south of a north-flowing creek (Assessment Report 8324). The showing is located along strike with the Elizabeth occurrence (094C 030), 1 kilometre to the south.

COMMODITIES: Lead

MINERALS

SIGNIFICANT: Galena
ASSOCIATED: Barite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Replacement Sedimentary
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Tabular

DIMENSION: STRIKE/DIP: 015/30N

TREND/PLUNGE:

COMMENTS: Bedding orientation. A well-exposed fault strikes 310 degrees and dips 80 degrees northeast.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	
Middle Devonian	Otter Lakes	Undefined Formation	

LITHOLOGY: Dolomitic Limestone
Massive Limestone
Sandy Dolomite
Argillaceous Dolomite
Calcareous Slate

HOSTROCK COMMENTS: The Cambro-Ordovician Razorback Group is also part of the sequence. The host Echo Lake Group is Middle Ordovician to Lower Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
Cassiar
RELATIONSHIP:
GRADE: Zeolite

CAPSULE GEOLOGY

The Gwynn showing is located on the western edge of the Omineca Belt within para-autochthonous rocks of North American craton affinity. The showing is located on a hillside above a north-flowing tributary to the Osilinka River, approximately 180 kilometres northwest of Fort St. James.

A Cambrian to Middle Devonian package consisting of the Razorback (Kechika and Road River group equivalents), Echo Lake (Sandpile Group equivalent) and Otter Lakes (McDame Group equivalent) groups comprise a regional northwest-plunging anticline which is offset by faults and local drag folds. Sandy and argillaceous dolomite, massive limestone and minor calcareous slate comprise this Lower Paleozoic sequence.

The showing, exposed in trenches along a ridge top, consists of galena with barite and minor quartz within dolomitized limestone of the Middle Ordovician to Lower Devonian Echo Lake Group. Bedding strikes 015 degrees and dips 30 degrees northwest.

BIBLIOGRAPHY

EMPR AR 1951-118; 1952-98,103; 1953-94; 1958-74
EMPR EXPL 1976-E168
EMPR BULL 91
EMPR ASS RPT 71, 72, 1654, 5937, 6485, *8324
EMPR FIELDWORK 1989, pp. 101-114; 1991, pp. 127-145; 1992,

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
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BIBLIOGRAPHY

pp. 109-134
EMPR OF 1990-17; 1993-2
GSC MEM 274, p. 201

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/01

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 033**

NATIONAL MINERAL INVENTORY: 094C2 Zn2

NAME(S): **GORDON**, ALFIE, DONNA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 31 N
LONGITUDE: 124 52 50 W
ELEVATION: 1225 Metres

NORTHING: 6221616
EASTING: 383101

LOCATION ACCURACY: Within 500M

COMMENTS: Area of trenching and stripping on a hillside south of the Osilinka River (Assessment Report 8324).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite
ASSOCIATED: Dolomite Barite Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Disseminated
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Cylindrical
MODIFIER: Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	
Middle Devonian	Otter Lakes	Undefined Formation	

LITHOLOGY: Dolomitic Limestone
Brecciated Dolomitic Limestone
Massive Limestone
Sandy Dolomite
Argillaceous Dolomite
Calcareous Slate

HOSTROCK COMMENTS: The Cambro-Ordovician Razorback Group is also part of the host sequence. The Echo Lake Group is Middle Ordovician to Lower Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
Cassiar
RELATIONSHIP:
GRADE: Zeolite

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1952
SAMPLE TYPE: Chip
COMMODITY: Zinc
GRADE: 2.6000 Per cent

COMMENTS: Across 12 metres.
REFERENCE: Assessment Report 72.

CAPSULE GEOLOGY

The Gordon showing is located on the western edge of the Omineca Belt within para-autochthonous rocks of North American craton affinity. The showing is located on a hillside south of the Osilinka River, approximately 180 kilometres northwest of Fort St. James.

The occurrence is hosted in a sandy dolomite and massive limestone package of the Middle Ordovician to Early Devonian Echo Lake Group (Sandpile Group equivalent) and the Middle Devonian Otter Lakes Group (McDame Group equivalent), and Cambrian to Ordovician Razorback Group calcareous slate and argillaceous dolomite (Road River and Kechika group equivalents). A regional northwest-plunging anticline is offset by faults and local drag folds.

Sulphide minerals are hosted in an area where the dolomitic limestone is intensely brecciated. The breccia zone is typically cone or pipe-shaped and is offset by northwest-striking faults. Sphalerite, galena and pyrite occur as replacements of the dolomitized groundmass and as disseminations. Barite, dolomite and

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RUN TIME: 11:51:27

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PAGE: 116
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CAPSULE GEOLOGY

calcite are also associated with the breccia. A chip sample taken across 12 metres assayed 2.6 per cent zinc (Assessment Report 72).

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EMPR FIELDWORK 1989, pp. 101-114; 1991, pp. 127-145; 1992,
pp. 109-134
EMPR OF 1990-17; 1993-2
EMPR BULL 91
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/01

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

despite some surface weathering.

The smaller parallel pegmatite dike of similar shape occurs about a hundred metres northeast of the larger one. Although pyrite, tourmaline and garnet are more abundant, only minor amounts of muscovite mica are present in this dike.

The larger dike was explored by a shaft and several drifts, while the smaller one was trenched by General Holdings Company Ltd. between 1925 and 1927. The company extracted up to 2.3 tonnes of raw mica from the workings in 1927 (Minister of Mines Annual Report 1927, page 161).

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GSC MEM 274, pp. 101,102
GSC SUM RPT *1927A, pp. 31-35
GSC P 75-33, p. 17; 77-19
GSC MAP 2-1975
GSC EC GEOL No. 19, pp. 83,90
EMR MP CORPFILE (General Holding Company Limited)
CANMET RPT No. 701, pp. 78-80

DATE CODED: 1985/07/24
DATE REVISED: 1992/08/24

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 035**

NATIONAL MINERAL INVENTORY: 094C10 Mic1

NAME(S): **WEST MICA MOUNTAIN**

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C10W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 31 52 N
LONGITUDE: 124 46 49 W
ELEVATION: 2000 Metres

NORTHING: 6266613
EASTING: 390502

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located on West Mica Mountain (Minister of Mines Annual Report, page A154).

COMMODITIES: Mica Gemstones

MINERALS

SIGNIFICANT: Muscovite Quartz Feldspar Tourmaline Garnet

ASSOCIATED: Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Pegmatite Industrial Min.

TYPE: O03 Muscovite pegmatite

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Pegmatite
Mica Schist
Gneiss
Quartzite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Amphibolite

COMMENTS: Kyanite zone (Paper 75-33, Map 2-1975).

CAPSULE GEOLOGY

The West Mica Mountain mica occurrence is located on the north side of West Mica Mountain, 84 kilometres north of Germansen Landing.

Hostrocks are pegmatites within mica schists and gneisses and quartzites of the Hadrynian Ingenika Group which have been metamorphosed to the kyanite zone of the amphibolite facies of regional metamorphism. The occurrence is described (1927 Summary Report, Part A, page 33A) as the richest pegmatite dike in the Mica Mountain mica district; apparently, large muscovite crystals (possibly up to 33 centimetres across) have been extracted from the deposit and a small shipment made. The mode of occurrence is described as similar to the Mica Mountain occurrence (094C 034) located 5 kilometres to the northeast.

All mica-bearing pegmatites in the area are reported to be formed of feldspar and quartz with small amounts of pyrite, tourmaline and garnets. The tourmaline occurs as small well-formed, jet black crystals frequently arranged in rosettes, and commonly found in the country rocks adjoining the pegmatites. The garnets are bright ruby-red in colour.

BIBLIOGRAPHY

EMPR AR *1926-153, 1927-C161

EMPR PF (Report on Mica-bearing pegmatite near Fort Graham held by the General Holding Company, 1928; Three letters with regard to the Mica deposits held by the General Holding Company, 1928)

EMR MP CORPFILE (General Holding Company Limited)

GSC EC GEOL No. 19, pp. 83,90

GSC P 75-33, p .17

GSC SUM RPT *1927, Part A, pp. 31A-35A

CANMET RPT No. 701, pp. 78-80

DATE CODED: 1992/03/10
DATE REVISED: 1992/08/24

CODED BY: RHM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 035**

MINFILE NUMBER: **094C 036**

NATIONAL MINERAL INVENTORY: 094C10 Mic1

NAME(S): **RAVENAL**, LOST PIPE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C07E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 29 49 N
LONGITUDE: 124 43 30 W
ELEVATION: 2100 Metres

NORTHING: 6262724
EASTING: 393806

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from map showing claims (Minister of Mines Annual Report 1926, page A154).

COMMODITIES: Mica

Gemstones

MINERALS

SIGNIFICANT: Muscovite Feldspar Quartz Tourmaline Garnet

ASSOCIATED: Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Pegmatite Industrial Min.

TYPE: O03 Muscovite pegmatite

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Pegmatite
Mica Schist
Quartzite
Gneiss

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Cassiar Mountains

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Amphibolite

COMMENTS: Kyanite zone (Paper 75-33, Map 2-1975).

CAPSULE GEOLOGY

The Ravenal mica occurrence is located on the south side of Mount Henri, 80 kilometres north of Germansen Landing.

Hostrocks are pegmatites within mica schists and gneisses and quartzites of the Hadrynian Ingenika Group which have been metamorphosed to the kyanite zone of the amphibolite facies of regional metamorphism. Two small pegmatite veins, 1 metre and 50 centimetres wide respectively, are exposed on a vertical cliff. The veins are mainly quartz, with mica of "good grade" (Geological Survey of Canada Summary Report, 1927, Part A, page 33).

All mica-bearing pegmatites in the area are reported to be formed of feldspar and quartz with small amounts of pyrite, tourmaline and garnet. The tourmaline occurs as small well-formed, jet black crystals frequently arranged in rosettes, and commonly found in the country rocks adjoining the pegmatites. The garnets are bright ruby-red in colour.

BIBLIOGRAPHY

EMPR AR 1926-155
GSC SUM RPT *1927, Part A, p. 33A
GSC P 75-33, p. 17

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/09

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 037**

NATIONAL MINERAL INVENTORY: 094C7 Au1

NAME(S): **RUBY CREEK**, RUBY, LORIMER CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C07E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 26 01 N
LONGITUDE: 124 40 54 W
ELEVATION: 1350 Metres

NORTHING: 6255609
EASTING: 396301

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location is the "gold" occurrence on Geological Survey of Canada Map 2-1975 (Paper 75-33, page 17).

COMMODITIES: Mica

MINERALS

SIGNIFICANT: Mica Pyrrhotite Quartz Feldspar
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Pegmatite Industrial Min.
TYPE: O03 Muscovite pegmatite

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Pegmatite
Mafic Gneiss
Mica Schist
Quartzite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
COMMENTS: Kyanite zone (Geological Survey Paper 75-33, Map 2-1975).

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Amphibolite

CAPSULE GEOLOGY

The Ruby Creek mica occurrence is located on Ruby (Lorimer (?) Creek (Minister of Mines Annual Report 1930, page A152), approximately 74 kilometres north of Germansen Landing.

Mica-bearing pegmatites, consisting of primarily feldspar and quartz, occur in an area underlain by mica schists, mafic gneisses and quartzites of the Hadrynian Ingenika Group. These rocks have been regionally metamorphosed to the kyanite zone of the amphibolite facies.

The mode of occurrence is described as similar to the Mica Mountain occurrence (094C 035) located 11 kilometres to the north (Minister of Mines Annual Report 1926, page 153) except that the metamorphic grade is higher, the rocks are more gneissic and pyrrhotite is abundant in the mafic layers. The pyrrhotite-rich bands are up to 6 metres in thickness. A selected sample of pyrrhotite assayed trace gold and silver and nil nickel and copper.

BIBLIOGRAPHY

EMPR AR *1926-153, 1927-C161, *1930-152
GSC P 75-33, p. 17
GSC SUM RPT *1927, Part A, pp. 31A-35A
GSC EC GEOL No. 19, pp. 83, 90
GSC MAP 2-1975

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/10

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 038**

NATIONAL MINERAL INVENTORY: 094C3 Pb2

NAME(S): **REGENT**, TENAKIHI CREEK

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 09 25 N
LONGITUDE: 125 05 52 W
ELEVATION: 1600 Metres

NORTHING: 6225529
EASTING: 369708

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location from Memoir 274, page 227.

COMMODITIES: Lead Silver

MINERALS

SIGNIFICANT: Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Concordant
CLASSIFICATION: Replacement Epigenetic
COMMENTS: The deposit may be a replacement-type.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Hadrynian	Ingenika	Espee	

LITHOLOGY: Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1954

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	1576.0000	Grams per tonne
Lead	83.5000	Per cent

COMMENTS: Average of several samples.
REFERENCE: Geological Survey of Canada Memoir 274, page 228.

CAPSULE GEOLOGY

The Regent lead-silver showing is located near the south end of the ridge east of the confluence of Tenakihi Creek and Osilinka River, 50 kilometres northwest of Germansen landing.

Hostrocks are dense, flat-lying limestone of the Hadrynian Espee Formation of the Ingenika Group. An irregular, pod-shaped "vein" of solid, crystalline galena is present in the limestone hostrock, and is exposed for 1 metre, reaching a maximum width of 30 centimetres. The galena is concordant to bedding and weakly banded with alternating coarse and fine-grained material. The exposure is poor and badly weathered, however boulders of massive galena up to 30 centimetres in size are common in the talus on the western side of the ridge. Grab samples of the galena yielded assays which averaged 83.5 per cent lead and 1576 grams per tonne silver (Geological Survey of Canada Memoir 274, page 228).

BIBLIOGRAPHY

GSC MEM *274, pp. 227-228
GSC MAP 1030A
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/21

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 039**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLOOM CIRQUE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 28 52 N
LONGITUDE: 125 58 24 W
ELEVATION: 2000 Metres

NORTHING: 6263590
EASTING: 316902

LOCATION ACCURACY: Within 1 KM

COMMENTS: West side of Bloom Creek cirque (Geological Survey of Canada Map 1030A, Memoir 274).

COMMODITIES: Cobalt Copper

MINERALS

SIGNIFICANT: Erythrite Chalcopyrite Malachite
ASSOCIATED: Quartz Pyrite Magnetite
ALTERATION: Epidote Chlorite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Porphyry Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Jurassic

Unnamed/Unknown Informal

LITHOLOGY: Hornblende Diorite
Quartz Diorite
Pegmatitic Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Bloom Cirque cobalt occurrence is located on the west side of Bloom Creek cirque, 110 kilometres northwest of Germansen Landing. Little geological information is available on the occurrence other than that "a little cobalt bloom was also observed coating fractures in small quartz veins in hornblende diorite east of Croyden Creek" (Geological Survey of Canada Memoir 274, page 202). In addition, Assessment Report 21521 (volume 1, page 24) reports minor cobalt bloom on fracture surfaces on the west side of Bloom cirque. Assessment Report 21521 also reports minor occurrences of fracture-controlled and disseminated chalcopyrite, malachite and pyrite throughout a fine-grained phase of the "Croydon Creek pluton" (Bloom Creek diorite), a Jurassic or older intrusion possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The fine-grained phase consists of hornblende diorite and quartz diorite and is located at the north end of Bloom cirque and on the ridge to the southeast. Mineralization is also reported to extend into the pegmatitic phase of the intrusion on the west side of Bloom cirque. Disseminated and stringer magnetite is also reported in the area (Assessment Report 21521, Geology Map, East Half). Widespread weak to strong propylitic alteration (epidote and chlorite) accompanies the mineralization.

BIBLIOGRAPHY

EMPR ASS RPT *21521
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM *274, p. 202
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/24

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 040**

NATIONAL MINERAL INVENTORY:

NAME(S): **MES (LINK)**, LINK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 25 29 N
LONGITUDE: 125 58 43 W

NORTHING: 6257331
EASTING: 316305

ELEVATION: 1920 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of molybdenite occurrence (Assessment Report 10924, Geology Map).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Malachite Molybdenite
ASSOCIATED: Quartz Pyrite
ALTERATION: Silica Malachite Tenorite Azurite
ALTERATION TYPE: Silicific'n Sericitic Argillic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Epigenetic Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Cretaceous-Tertiary

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Porphyritic Andesite
Fine Grained Andesite
Tuff
Limestone
Felsite Dike
Quartz Porphyry Dike
Dioritic Feldspar Porphyry Dike
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Mes copper occurrence is located on the mountain between Kliyul Creek and Mesilinka River, 11 kilometres west of Aiken lake, 105 kilometres northwest of Germansen Landing.

The main rock unit on the property belongs to the Upper Triassic Takla Group (Plughat Mountain Formation) and is comprised of gently northwest dipping porphyritic andesite, fine-grained andesite, banded tuff and minor limestone (Assessment Report 10924). Granodiorite, of Cretaceous or Tertiary age, outcrops on the southwest portion of the claims. A prominent northwest-trending gossan, 2000 metres in length and up to 600 metres wide is associated with a swarm of northwest-trending, steeply-dipping quartz porphyry, felsite and dioritic feldspar porphyry dikes (Assessment Report 10924).

Phyllic and argillic alteration are common in the Takla rocks with local silicification and development of quartz vein stockworks, particularly in the felsite dikes. Pyrite is common in some of the quartz vein stockworks, and reaches 20 per cent of the volume of the rock next to some of the felsic dikes, however within the gossan zone it averages 1 to 3 per cent (Assessment Report 10924). Away from the gossan zone it averages 1 per cent, although there is one 60-centimetre thick bed of massive pyrite in tuffs of the Takla Group. Numerous occurrences of patchy malachite are present in the quartz porphyry and felsite dikes, in fracture zones and in scattered quartz-pyrite veinlets which crosscut the volcanic rocks. A single occurrence of molybdenite was identified in a felsite dike (Assessment Report 10924). Azurite and tenorite were other minerals identified on the property (Assessment Report 10924).

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 125
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR ASS RPT *10924, 11728, 20909
EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1992/03/20
DATE REVISED: 1992/08/23

CODED BY: RHM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 041**

NATIONAL MINERAL INVENTORY: 094C6 Hg2

NAME(S): **MERCURY 1**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 18 55 N
LONGITUDE: 125 25 25 W
ELEVATION: 1020 Metres

NORTHING: 6243809
EASTING: 350095

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Mercury

MINERALS

SIGNIFICANT: Cinnabar
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I08 Silica-Hg carbonate

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Paleozoic	Big Creek	Undefined Formation	
Upper Paleozoic			Lay Range Assemblage

LITHOLOGY: Argillite
Shale
Phyllite
Limestone
Sandstone
Tuff
Gabbro

HOSTROCK COMMENTS: Rocks listed above are general area types only. The actual hostrocks are not reported.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Mercury 1 occurrence is located near the Tutizika River, approximately 7 kilometres west of the junction of the Mesilinka River, 95 kilometres northwest of Germansen Landing.

Cinnabar reportedly occurs (Geological Survey of Canada Memoir 274, page 203) in carbonatized fault zones which are part of, or are related to major northwest-trending block faults which have displaced all the units in the area. The actual hostrocks were not reported but are thought to be of either the Mississippian to Permian Lay Range assemblage or the Late Devonian to Early Mississippian Big Creek Group (S. Dudka, personal communication, 1993). Rocks in the area typically consist of argillite, shale, phyllite limestone, sandstone, tuff and gabbro. These two packages are in fault contact near their indicated location (Open File 1993-2).

BIBLIOGRAPHY

GSC MEM *274, p. 203
GSC MAP *1030A
EMPR FIELDWORK 1991, pp. 127-145

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/11

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 042**

NATIONAL MINERAL INVENTORY: 094C6 Hg1

NAME(S): **MERCURY 2**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 18 17 N
LONGITUDE: 125 25 10 W
ELEVATION: 990 Metres

NORTHING: 6242625
EASTING: 350311

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Mercury

MINERALS

SIGNIFICANT: Cinnabar
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I08 Silica-Hg carbonate

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Paleozoic			Lay Range Assemblage

LITHOLOGY: Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Mercury 2 occurrence is located near the Tutizika River, approximately 7 kilometres southwest of its confluence with the Mesilinka River, 94 kilometres northwest of Germansen Landing.

Cinnabar reportedly occurs (Geological Survey of Canada Memoir 274, page 203) in carbonatized fault zones which are part of, or are related to, major northwest-trending block faults which have displaced all the rock units in the area. Hostrocks are thought to be sediments of the Mississippian to Permian Lay Range assemblage (Open File 1993-2).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274, p. 203
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/11

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 043**

NATIONAL MINERAL INVENTORY:

NAME(S): **RUBYRED CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C15W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 55 38 N
LONGITUDE: 124 54 27 W
ELEVATION: 1160 Metres

NORTHING: 6310904
EASTING: 383906

LOCATION ACCURACY: Within 5 KM

COMMENTS: Location from Geological Survey of Canada Map 2-1975 (Paper 75-33).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE GROUP
Proterozoic-Cambrian Misinchinka

FORMATION
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Garnet Amphibolite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Muskwa Ranges

RELATIONSHIP:

GRADE: Amphibolite

CAPSULE GEOLOGY

The Rubyred Creek copper occurrence is located on the east side of Rubyred Creek, approximately 4 kilometres northeast of the north end of Williston Lake.

No information is available on the occurrence other than that "minor copper occurrences were noted in garnetiferous amphibolite on Rubyred Creek" (Geological Survey of Canada Paper 75-33, page 17). Hostrocks in the area are shown on Geological Survey of Canada Map 2-1975 as belonging to the Hadrynian to Lower Cambrian Misinchinka Group which includes phyllitic slate, chloritic phyllite, chloritic schist, garnet-mica schist, calcareous sericite schist, schistose siltstone, grit and pebble conglomerate.

BIBLIOGRAPHY

GSC P *75-33
GSC MAP 1030A; 2-1975
GSC MEM 274

DATE CODED: 1992/02/26
DATE REVISED: / /

CODED BY: RHM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 045**

NATIONAL MINERAL INVENTORY: 094C3 Cu10

NAME(S): **HORNWAY CREEK**, COPPER 1

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 47 N
LONGITUDE: 125 52 51 W
ELEVATION: 1600 Metres

NORTHING: 6233527
EASTING: 321347

LOCATION ACCURACY: Within 1 KM

COMMENTS: Chalcopyrite-bearing outcrop (Geological Survey of Canada Map 1030A).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE GROUP
Mesozoic

FORMATION

IGNEOUS/METAMORPHIC/OTHER
Hogem Intrusive Complex

LITHOLOGY: Diorite
Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Hornway Creek showing is located adjacent to a tributary of Hornway Creek, 4 kilometres east of Horn Peak and 85 kilometres northwest of Germansen Landing.

The area is underlain by diorite, monzonite and granodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. This copper occurrence is noted on Geological Survey of Canada Map 1030A. No description is available.

BIBLIOGRAPHY

GSC MEM 274, pp. 201-229
GSC MAP *1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/26

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 046**

NATIONAL MINERAL INVENTORY: 094C4 Cu4

NAME(S): **ETSCHITKA CREEK**, COPPER 2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 14 48 N
LONGITUDE: 125 44 12 W
ELEVATION: 2000 Metres

NORTHING: 6236901
EASTING: 330433

LOCATION ACCURACY: Within 1 KM

COMMENTS: Copper occurrence #2 (Geological Survey of Canada Map 1030A).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Etschitka Creek occurrence is located east of Etschitka Creek, approximately 95 kilometres northwest of Germansen Landing. The area is underlain by diorite, monzonite and granodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. This copper occurrence is noted on Geological Survey of Canada Map 1030A. No description is available.

BIBLIOGRAPHY

GSC MEM 274, p. 201-229
GSC MAP *1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/26

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 047**

NATIONAL MINERAL INVENTORY: 094C4 Cu5

NAME(S): **MATETLO CREEK**, COPPER 3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 14 08 N
LONGITUDE: 125 42 26 W
ELEVATION: 1860 Metres

NORTHING: 6235593
EASTING: 332209

LOCATION ACCURACY: Within 5 KM

COMMENTS: Copper occurrence #3 (Geological Survey of Canada Map 1030A).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Mesozoic

Hogem Intrusive Complex

LITHOLOGY: Diorite
Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT:
TERRANE:

CAPSULE GEOLOGY

The Matetlo Creek showing is located on a northeast-trending spur, 2 kilometres west of Matetlo Creek and approximately 95 kilometres northwest of Germansen Landing.

The area is underlain by diorite, monzonite and granodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. This copper occurrence is noted on Geological Survey of Canada Map 1030A. No description is available.

BIBLIOGRAPHY

GSC MEM 274, pp. 203-229
GSC MAP *1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/26

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 048**

NATIONAL MINERAL INVENTORY: 094C4 Cu7

NAME(S): **TENAKIHI CREEK**, COPPER 4-5

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 09 56 N
LONGITUDE: 125 33 22 W
ELEVATION: 2054 Metres

NORTHING: 6227447
EASTING: 341283

LOCATION ACCURACY: Within 1 KM

COMMENTS: Two copper occurrences, #4 and #5, are located in this area (Geological Survey of Canada Map 1030A).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Tenakihi Creek showing is located on a ridge top near the headwaters of Tenakihi Creek, approximately 95 kilometres northwest of Germansen Landing.

The area is underlain by diorite, monzonite and granodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. This copper occurrence is noted on Geological Survey of Canada Map 1030A. No description is available.

BIBLIOGRAPHY

GSC MEM 274, pp. 201-229
GSC MAP *1030A
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/27

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **REB**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C16W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 59 45 N
LONGITUDE: 124 20 35 W
ELEVATION: 1640 Metres

NORTHING: 6317724
EASTING: 418406

LOCATION ACCURACY: Within 500M

COMMENTS: Location of trenches on Map 3, Assessment Report 10831.

COMMODITIES: Lead Zinc Copper

MINERALS

SIGNIFICANT: Pyrite Chalcocite Chalcopyrite

ASSOCIATED: Barite Quartz

MINERALIZATION AGE: Ordovician-Silurian

DEPOSIT

CHARACTER: Stratiform Massive Vein
CLASSIFICATION: Sedimentary Exhalative Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Ordovician-Silurian	Road River	Undefined Formation	

LITHOLOGY: Graphitic Black Shale
Cherty Shale
Pyritic Chert
Siltstone
Limestone
Dolomite
Sandstone
Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1982
SAMPLE TYPE: Grab	
<u>COMMODITY</u>	<u>GRADE</u>
Lead	1.5000 Per cent
Zinc	0.2600 Per cent

REFERENCE: Assessment Report 10831.

CAPSULE GEOLOGY

The Reb showing is located in the northern Rocky Mountains, approximately 50 kilometres east of the northern end of Williston Lake.

Hostrocks are graphitic black shale, siltstone, limestone, dolomite, sandstone and shale of the Ordovician to Silurian Road River Group which is abnormally thick in the area, possibly due to deposition in a third-order basin (Assessment Report 10831). Cambro-Ordovician phyllitic, nodular mudstone of the Kechika Group is in fault contact to the east and Silurian and Devonian carbonate and fine clastic rocks are in unconformable contact to the west. Strata on the claims are overturned and strike northwest, dipping steeply east.

A 30-metre thick layer of massive pyrite is exposed in a creek bed in the black clastic section. Although outcrop is poor, mapping and hand trenching suggest that the pyrite is stratigraphically underlain by sediments containing nodular, disseminated and layered pyrite and chert as well as quartz and barite veins which carry minor chalcocite and chalcopyrite. A grab sample of a copper-stained quartz vein assayed 0.3 per cent copper. A sample of limonite-stained shale from bedrock or talus assayed 1.5 per cent lead and 0.26 per cent zinc (Assessment Report 10831).

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BIBLIOGRAPHY

EMPR ASS RPT 8621, 9848, *10831
EMPR EXPL 1982-325
GSC MAP 2-1975
GSC P 75-33
Hrkac, C.A. (1982): Petrology and Geology of the Sedimentary rocks on
the
REB Mineral Claims, in Northeastern British Columbia, BSc. Thesis,
University of British Columbia (54 pages)

DATE CODED: 1992/02/27
DATE REVISED: / /

CODED BY: RHM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 050**

NATIONAL MINERAL INVENTORY: 094C4 Cu8

NAME(S): **HOGEM COPPER**, OSILINKA RIVER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 06 24 N
LONGITUDE: 125 42 18 W
ELEVATION: 2133 Metres

NORTHING: 6221249
EASTING: 331784

LOCATION ACCURACY: Within 1 KM

COMMENTS: Copper occurrence in the Hogem Intrusive Complex between the Osilinka River and its major south-forking branch (Geological Survey of Canada Map 1035A).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Hogem Copper showing is located 17 kilometres east of Mount Ferris and approximately 80 kilometres northwest of Germansen Landing.

The area is underlain by diorite, monzonite and granodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. This copper occurrence is noted on Geological Survey of Canada Map 1030A. No description is available.

BIBLIOGRAPHY

GSC MEM 274, pp. 201-229
GSC MAP *1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/28

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 051**

NATIONAL MINERAL INVENTORY: 094C4 Cu9

NAME(S): **DETNI CREEK**, OMINECA RIVER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 01 36 N
LONGITUDE: 125 52 54 W
ELEVATION: 1800 Metres

NORTHING: 6212794
EASTING: 320429

LOCATION ACCURACY: Within 500M

COMMENTS: Copper occurrence at the head of Detni Creek (Geological Survey of Canada Map 1030A).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Detni Creek showing is located at the head of Detni Creek, approximately 80 kilometres west of GERMANSSEN LANDING.

The area is underlain by diorite, monzonite and granodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. This copper occurrence is noted on Geological Survey of Canada Map 1030A. No description is available.

BIBLIOGRAPHY

GSC MEM 274, pp. 201-229
GSC MAP *1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/26

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 052**

NATIONAL MINERAL INVENTORY:

NAME(S): **TUTIZZI COPPER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 19 22 N
LONGITUDE: 125 43 00 W
ELEVATION: 1400 Metres

NORTHING: 6245320
EASTING: 332007

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of copper showing on Geological Survey of Canada Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena Specularite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Jurassic

GROUP

Takla

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Intrusive
Volcanic

HOSTROCK COMMENTS: The Jurassic or older intrusive hostrock may be related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

A copper showing is shown on Map 1030A (Geological Survey of Canada Memoir 274) approximately 2 kilometres north of the western end of Tutizzi Lake, 90 kilometres northwest of Germansen Landing.

Little information is available on the occurrence, however, Geological Survey of Canada Memoir 274 (page 202) reports that "north of Tutizzi Lake, several of the quartz veins contain crystalline galena, commonly accompanied by chalcopyrite or specular hematite." Further, Memoir 274 (page 223) states that quartz veins are numerous in the area, some attaining a width of 90 centimetres and a length of a hundred metres or more.

The hostrocks are thought to be part of a Jurassic or older intrusion, possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The showing occurs near the contact with the Upper Triassic Takla Group (Plughat Mountain Formation).

BIBLIOGRAPHY

GSC MEM *274, pp. 201,223
GSC MAP *1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/19

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 053**

NATIONAL MINERAL INVENTORY: 094C5 Pb1

NAME(S): **TUTIZZI LAKE**, ALTABRIT, BRIT,
ALTA, ABE 4

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E 094C05W
BC MAP:
LATITUDE: 56 20 17 N
LONGITUDE: 125 45 01 W
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample R-3008 (Assessment Report 10436, Figure 11).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6247102
EASTING: 329997

COMMODITIES: Lead Copper Silver

MINERALS

SIGNIFICANT: Galena Chalcopyrite Pyrite Specularite Tetrahedrite
COMMENTS: Possibly tetrahedrite.
ASSOCIATED: Quartz Pyrite Talc Arsenopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Concordant Discordant Breccia
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 9 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Approximate dimension of main mineralized quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Unnamed/Unknown Informal
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Basalt
Pyroxenite
Porphyritic Monzodiorite
Hornblendite

HOSTROCK COMMENTS: The hostrock is a Jurassic or older intrusion, possibly related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1954
SAMPLE TYPE:	Grab		
COMMODITY	GRADE		
Silver	176.2000	Grams per tonne	
Copper	1.4400	Per cent	
Lead	50.3800	Per cent	

COMMENTS: Composite of two grab samples.
REFERENCE: Geological Survey of Canada Memoir 274, page 223.

CAPSULE GEOLOGY

The Tutizzi Lake lead-copper showing is located on a ridge, 5 kilometres north of the west end of Tutizzi Lake, 90 kilometres northwest of Tutizzi Lake.

The hostrock is a diorite (Geological Survey of Canada Memoir 274, page 223) or "basalt" which is located between pyroxenite and porphyritic monzonite-diorite sills (Assessment Report 10436). These are part of a Jurassic or older intrusion, possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex (Fieldwork 1991, page 131).

The showing consists of a 9-metre wide iron-stained zone containing a 90-centimetre wide concordant pod of brecciated quartz which in turn contains a 38-centimetre wide sulphide-rich zone containing galena and chalcopyrite. The vein is about 9 metres long and a composite of two samples assayed 0.26 gram per tonne gold, 176.2 grams per tonne silver, 1.44 per cent copper and 50.38 per cent lead (Geological Survey of Canada Memoir 274, page 223). In

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CAPSULE GEOLOGY

addition, there are numerous discordant, flat-lying quartz veins up to 90 centimetres wide which contain minor amounts of pyrite, galena, chalcopyrite, specular hematite and possibly tetrahedrite (Assessment Report 10436). Minor amounts of pyrite and arsenopyrite, usually associated with talc, are also present at the contact between pyroxenite and monzonite-diorite sills (Assessment Report 10436).

BIBLIOGRAPHY

EMPR ASS RPT *10436, 22121, 22860
EMPR FIELDWORK 1991, pp. 127-145
GSC MAP 1030A
GSC MEM *274, p. 223

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/17

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 054**

NATIONAL MINERAL INVENTORY: 094C5 Pb2

NAME(S): **ABRAHAM CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 19 14 N
LONGITUDE: 125 55 54 W
ELEVATION: 2000 Metres

NORTHING: 6245619
EASTING: 318705

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of lead-copper showing on Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Lead Copper

MINERALS

SIGNIFICANT: Galena Chalcopyrite Specularite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Mesozoic

Hogem Intrusive Complex

LITHOLOGY: Hornblende Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

A lead-copper occurrence is shown on Map 1030A (Geological Survey of Canada Memoir 274) north of the glacier at the head of Abraham Creek, 98 kilometres northwest of Germansen Landing.

No information is available on the occurrence, however Memoir 274 (page 202) reports that quartz veins west of Abraham Creek contain crystalline galena, commonly accompanied by chalcopyrite or specular hematite. Hostrocks are hornblende diorite and appinite of the Late Triassic to Early Cretaceous Hogem intrusive Complex.

BIBLIOGRAPHY

GSC MEM *274, p. 202
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/18

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 055**

NATIONAL MINERAL INVENTORY: 094C5 Pb3

NAME(S): **TUTIZZI LEAD**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 18 53 N
LONGITUDE: 125 42 52 W
ELEVATION: 1150 Metres

NORTHING: 6244418
EASTING: 332109

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of lead showing on Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Lead

Copper

MINERALS

SIGNIFICANT: Galena Chalcopyrite Specularite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

A lead showing is shown on Map 1030A (Geological Survey of Canada Memoir 274) approximately 1 kilometre north of the western end of Tutizzi Lake, 90 kilometres northwest of Germansen Landing.

No information is available on the Tutizzi Lead occurrence, however Memoir 274 (page 202) reports that "north of Tutizzi Lake, several...quartz veins contain crystalline galena, commonly accompanied by chalcopyrite or specular hematite". Hostrocks are Upper Triassic Takla Group (Plughat Mountain Formation) volcanics and sediments.

BIBLIOGRAPHY

GSC MEM *274, p. 202
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/18

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 056**

NATIONAL MINERAL INVENTORY:

NAME(S): **IZZI**, ALTABRIT, NORM 1

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 21 07 N
LONGITUDE: 125 44 18 W
ELEVATION: 1900 Metres

NORTHING: 6248618
EASTING: 330796

LOCATION ACCURACY: Within 500M

COMMENTS: Location of trenches (Assessment Report 14809, Geology Map).

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Hematite
ALTERATION: Malachite Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Unnamed/Unknown Informal
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Pyroxenite
Hornblendite
Gabbro
Monzonite
Gossan

HOSTROCK COMMENTS: The hostrock is a part of a Jurassic or older intrusion which may be related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Izzy showings are located near a ridge top, 6.5 kilometres north of the west end of Tutizzi Lake, 90 kilometres northeast of Germansen Landing.

The hostrock is a Jurassic or older hornblende-bearing pyroxenite, possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The ultramafic rocks contain variable amounts of olivine and plagioclase phenocrysts and are interbanded with and gradational into gabbroic and monzonitic phases (Assessment Report 14809, Geology Map). Andesitic volcanic rocks of the Takla Group outcrop east of the showings.

Gossan zones are developed in decomposed rocks above timber line in the area of the showings (Assessment Report 14809, Geology Map), and chalcopyrite, malachite, hematite and pyrite have been identified. Rock chip samples yielded results as high as 1.525 grams per tonne gold (Assessment Report 14809).

BIBLIOGRAPHY

EMPR ASS RPT 10436, *14809, 22121, 22860
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1992/03/17
DATE REVISED: 1997/09/09

CODED BY: RHM
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 057**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOATS**, SILVER

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 11 32 N
LONGITUDE: 125 02 07 W
ELEVATION: 1720 Metres

NORTHING: 6229338
EASTING: 373705

LOCATION ACCURACY: Within 500M

COMMENTS: A quartz vein breccia outcrop (Assessment Report 17825).

COMMODITIES: Silver Gold Lead Zinc

MINERALS

SIGNIFICANT: Galena Pyrite Sphalerite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

DIMENSION: 91 x 4 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: Veins are 0.91 to 4.5 metres wide and 30 to 91 metres long.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic Ingenika Swannell

LITHOLOGY: Quartzite
Phyllitic Argillite
Siliceous Sericite Schist

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Ancestral North America

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1988

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

15.7000

Grams per tonne

Gold

0.2450

Grams per tonne

Lead

0.0962

Per cent

COMMENTS: Grab sample of quartz vein breccia.

REFERENCE: Assessment Report 17825.

CAPSULE GEOLOGY

The Goats quartz vein occurs at the headwaters of an unnamed creek, north of the Osilinka River on the western edge of the Omineca Belt. The occurrence is approximately 50 kilometres north of Germansen Landing.

A vertical quartz vein breccia strikes north within sheared quartzite, phyllitic argillite and siliceous sericite schist units of the Upper Proterozoic Ingenika Group, Swannell Formation. Chert fragments occur along the east contact of the vein, and quartzite fragments are noted within the vein.

Minerals within the quartz vein breccia consist of disseminated galena and pyrite with minor amounts of sphalerite. A grab sample assayed 0.245 gram per tonne gold, 15.7 grams per tonne silver, and 0.0962 per cent lead (Assessment Report 17825). A sample from a quartz vein breccia, located 900 metres north-northwest of the main showing, assayed 0.058 gram per tonne gold and 11.6 grams per tonne silver (Assessment Report 17825). Veins are 0.91 to 4.5 metres wide and 30 to 91 metres long.

BIBLIOGRAPHY

EMPR ASS RPT *17825
EMPR EXPL 1988-C183

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BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/11

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 058**

NATIONAL MINERAL INVENTORY: 094C3 Au3

NAME(S): **HAHA CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 02 00 N
LONGITUDE: 125 25 12 W
ELEVATION: 1000 Metres

NORTHING: 6212431
EASTING: 349217

LOCATION ACCURACY: Within 1 KM

COMMENTS: Sheared quartz diorite exposed in a canyon on Haha Creek
(Geological Survey of Canada Memoir 274, page 201).

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Chalcopyrite Gold Pyrite
COMMENTS: A "little free gold" and minor chalcopyrite in syenite.
ASSOCIATED: Quartz
ALTERATION: Limonite Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkaic porphyry Cu-Au
DIMENSION:
COMMENTS: A vertical shear zone strikes 020.

STRIKE/DIP: 020/90

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Jurassic
Mesozoic

Duckling Creek Syenite Complex
Hogem Intrusive Complex

LITHOLOGY: Syenite
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Haha Creek showing is located in a canyon on Haha Creek, approximately 2 kilometres upstream from its confluence with the Osilinka River and 75 kilometres west-northwest of Germansen Landing. Chalcopyrite, malachite, pyrite and limonite are hosted within a shear zone in a medium to coarse-grained, pink to orange syenite of the Early to Middle Jurassic Duckling Creek Syenite Complex, one of several phases comprising the Late Triassic to Early Cretaceous Hogem Intrusive Suite. This vertical shear zone, parallel to Haha Creek, strikes 020 degrees. Also reported in the canyon on Haha Creek are small quartz veins in sheared quartz diorite containing "a little free gold".

BIBLIOGRAPHY

EMPR EXPL *1978-E241
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM *274, p. 201
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/28

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 059**

NATIONAL MINERAL INVENTORY: 094C5 Zn1

NAME(S): **POLARIS ZINC**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 27 18 N
LONGITUDE: 125 44 38 W
ELEVATION: 1020 Metres

NORTHING: 6260097
EASTING: 330911

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of zinc occurrence from Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Zinc Copper

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite

COMMENTS: Zinc mineral not reported.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive

CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Sediment/Sedimentary Rock
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Polaris Zinc occurrence is shown on Map 1030A (Geological Survey of Canada Memoir 274) as a zinc occurrence located near the mouth of Polaris Creek which drains into Lay Creek. The area is 100 kilometres northwest of Germansen Landing.

The property is underlain by volcanic and sedimentary strata recently reassigned to the Upper Triassic Takla Group, Plughat Mountain Formation (formerly assigned to the Lay Range assemblage) (Fieldwork 1992; Open File 1993-2).

Little information is available on the zinc occurrence but Geological Survey of Canada Memoir 274 (page 222) does mention the presence of lens-like bodies of massive sulphide in the area. These bodies consist of pyrrhotite with minor pyrite and chalcopyrite. They are up to 9 metres thick and 30 metres long and are associated with the Lay Creek fault.

BIBLIOGRAPHY

EMPR ASS RPT 6037, 6607, 9201, 11251, 12110, 17457
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP *1030A
GSC MEM *274, p. 218

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/14

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 060**

NATIONAL MINERAL INVENTORY:

NAME(S): **PELLY CREEK PLACER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C14W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 45 46 N
LONGITUDE: 125 27 20 W
ELEVATION: 800 Metres

NORTHING: 6293671
EASTING: 349901

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location from Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Hadrynian	Ingenika	Tsaydiz	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Gravel
Sericitic Phyllite
Limestone
Grit

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Pelly Creek Placer occurrence is shown on Geological Survey of Canada Map 1030A at the junction of Pelly Creek and Ingenika River, 120 kilometres northwest of Germansen Landing.

No information is available on the placer gold occurrence, however, bedrock in the area consists of sericitic phyllites with interbeds of limestone and grit of the Hadrynian Tsaydiz Formation, Ingenika Group (Geological Survey of Canada Paper 77-19, page 3).

BIBLIOGRAPHY

GSC MAP 1030A
GSC MEM 274, p. 199
GSC P 77-19, p. 3

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/24

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 061**

NATIONAL MINERAL INVENTORY: 094C3 C11

NAME(S): **USLIKA COAL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 03 57 N
LONGITUDE: 125 15 30 W
ELEVATION: 920 Metres

NORTHING: 6215706
EASTING: 359406

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location from Geological Survey of Canada Map 1030A.

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal
MINERALIZATION AGE: Cretaceous-Tertiary

DEPOSIT

CHARACTER: Stratiform
CLASSIFICATION: Fossil Fuel
TYPE: A02 Lignite

Massive
Sedimentary

A03 Sub-bituminous coal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Cretaceous-Tertiary

GROUP

Sustut

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Coal
Bituminous Shale
Micaceous Sandstone
Massive Shale
Polymictic Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Cassiar Mountains

CAPSULE GEOLOGY

The Uslika Coal occurrence is located on the west side of Osilinka River valley, south of Uslika Lake, 45 kilometres northwest of Germansen Landing.

A small fault-bounded outlier, approximately 1.5 kilometres by 500 metres in size, contains conglomerate, sandstone, shale and coal of the Upper Cretaceous to Tertiary Sustut Group. The section is approximately 120 metres thick. The basal unit is a conglomerate with pebbles of various lithologies up to 12 centimetres in size (Geological Survey of Canada Memoir 274, page 191). The conglomerate is overlain by beds of grey massive shale, coarse micaceous sandstone containing numerous woody fragments and thin seams of coal and coaly shale (Geological Survey of Canada Memoir 274, page 191). The largest observed coal seam, free of shaly partings, is 45 centimetres thick.

The coal is reported to be of lignite to sub-bituminous rank (Fieldwork 1991, page 132).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, p. 132
EMPR OF 1992-11
GSC MAP 1030A
GSC MEM 274, p. 191
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/24

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 062**

NATIONAL MINERAL INVENTORY:

NAME(S): **NITRE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 16 26 N
LONGITUDE: 125 04 42 W
ELEVATION: 1600 Metres

NORTHING: 6238505
EASTING: 371308

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location is from Map 1030A (Geological Survey of Canada Memoir 274).

COMMODITIES: Potassium Nitrate

MINERALS

SIGNIFICANT: Nitre
COMMENTS: Also calcium sulphate.
ASSOCIATED: Calcite
MINERALIZATION AGE: Recent

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Slaty Limestone
Sericitic Phyllite
Quartz Chlorite Schist
Sericite Schist
Quartzite
Slate
Quartzitic/Quartzose Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

An occurrence of nitre (potassium nitrate) has been documented (Geological Survey of Canada Memoir 274, page 69) on a cliff face in the Tenakihi Range, approximately 65 kilometres northwest of Germansen Landing.

An efflorescent encrustation composed mainly of nitre, calcium sulphate and minor calcite forms during dry periods on a 1.5-metre section of impure, dark grey, fine-grained, slaty limestone and blue-grey, friable, sericitic phyllite on a 100-metre long cliff face. Hostrocks are part of the Hadrynian Ingenika Group which consists of quartz chlorite schist, sericite schist, quartzite, slate, phyllite, quartzitic conglomerate, minor limestone, chloritoid schist and tourmaline zoisite schist.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM *274, pp. 69-70
GSC MAP *1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/16

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 063**

NATIONAL MINERAL INVENTORY: 094C4 Cu3

NAME(S): **DOVE** HAW

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 00 11 N
LONGITUDE: 125 42 08 W
ELEVATION: 1525 Metres

NORTHING: 6209715
EASTING: 331505

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for mineralized sample 55924 on the Haw claim (Assessment Report 21713). The area was originally staked as the Dove claims but showing locations were never documented. Refer also to the Hawk showings (094C 138-140) as these also are in the area once covered by the Dove claims.

COMMODITIES: Copper Molybdenum Zinc Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Bornite Chalcocite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Jurassic
Mesozoic

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER
Duckling Creek Syenite Complex
Hogem Intrusive Complex

LITHOLOGY: Hornblende Syenite
Syeno Diorite
Monzonite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY

GRADE

Silver	6.0000	Grams per tonne
Copper	0.4800	Per cent
Molybdenum	0.0940	Per cent
Zinc	0.0720	Per cent

COMMENTS: Sample 55924.
REFERENCE: Assessment Report 21713.

CAPSULE GEOLOGY

The Dove showing is located 29 kilometres west of Uslika Lake and approximately 85 kilometres northwest of Germansen Landing.

The showing is located within the Middle to Early Jurassic Duckling Creek Syenite Complex, one of several phases comprising the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

During the late 1960s and early 1970s this area was investigated as the Dove claims and was reported to be underlain by syenite, diorite and monzonite. Chalcopyrite, bornite and malachite were found to be disseminated in hornblende syenite. This occurrence may be similar to the nearby ND showing (094C 077).

In 1991, on the Haw claims, covering the same ground as the Dove, a sample of fine-grained gneissic mesosyenite or syenodiorite containing very fine-grained disseminated pyrite and chalcopyrite with malachite and chalcocite assayed 0.48 per cent copper, 0.72 per cent zinc, 0.094 per cent molybdenum and 6 grams per tonne silver (Assessment Report 21713).

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 152
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR ASS RPT *21713
EMPR GEM *1970-185
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/06/23

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 065**

NATIONAL MINERAL INVENTORY:

NAME(S): **PORPHYRY CREEK MOLYBDENUM**, DAVIE CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 27 24 N
LONGITUDE: 125 59 33 W
ELEVATION: 1380 Metres

NORTHING: 6260922
EASTING: 315604

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of molybdenum showing (Geological Survey of Canada Map 1030A).

COMMODITIES: Molybdenum

MINERALS

SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Jurassic
Mesozoic

Unnamed/Unknown Informal
Hogem Intrusive Complex

LITHOLOGY: Mafic Intrusive Rock
Ultramafic Intrusive Rock

HOSTROCK COMMENTS: The Jurassic or older mafic to ultramafic intrusion may be related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

A molybdenum showing is shown between Porphyry Creek and Croyden Creek on Map 1030A (Geological Survey of Canada Memoir 274), 110 kilometres northwest of Germansen Landing.

No geological information is available on the occurrence. Recent mapping (Open File 1993-2), however, shows that it may be hosted in a Jurassic or older mafic-ultramafic body which intrudes the Upper Triassic Takla Group (Plughat Mountain Formation) near its contact with the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP *1030A
GSC MEM *274

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/23

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 066**

NATIONAL MINERAL INVENTORY:

NAME(S): **CROYDON NORTH**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 28 09 N
LONGITUDE: 125 59 37 W
ELEVATION: 1320 Metres

NORTHING: 6262316
EASTING: 315596

LOCATION ACCURACY: Within 500M

COMMENTS: Location is from Assessment Report 21521, volume 1, Figure 6 (Highlights of Previous Work).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Upper Triassic
Jurassic
Mesozoic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal
Hogem Intrusive Complex

LITHOLOGY: Gabbro
Hornblendite
Pyroxenite
Orthopyroxenite
Peridotite
Volcanic

HOSTROCK COMMENTS: The actual hostrocks are unknown but the area has recently been mapped as a Jurassic or older mafic-ultramafic intrusion (Open File 1993-2).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1945

COMMODITY

GRADE

Gold

10.2900

Grams per tonne

COMMENTS: Grab sample assays of 10.29 and 4.11 grams per tonne gold from two locations are reported in figure 6, volume 1, Assessment report 21521.

REFERENCE: Assessment Report 21521.

CAPSULE GEOLOGY

The Croydon North gold showings are located on East Croydon Creek above the confluence with West Croydon Creek, 110 kilometres northwest of Germansen Landing.

The area is underlain by a Jurassic or older intrusion possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex (Open File 1993-2). This is a composite body of gabbro, hornblendite, pyroxenite, orthopyroxenite and peridotite over 20 kilometres long and 2 to 10 kilometres wide that intrudes Upper Triassic Takla Group rocks (Plughat Mountain Formation) near the Hogem contact.

No information is available on the occurrence, however figure 6 in volume 1 of Assessment Report 21521 shows two rock samples taken by Cominco in 1945 to have given assays of 10.29 and 4.11 grams per tonne gold, respectively.

BIBLIOGRAPHY

EMPR ASS RPT *21521
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 156
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/03/24
DATE REVISED: / /

CODED BY: RHM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 067**

NATIONAL MINERAL INVENTORY: 094C13 Cu1

NAME(S): **PELLY CREEK COPPER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C13E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 59 30 N
LONGITUDE: 125 36 50 W
ELEVATION: 1440 Metres

NORTHING: 6319497
EASTING: 341199

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location from Geological Survey of Canada Map 1030A (Memoir 274).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite Bornite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Breccia
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Cambrian	Atan	Undefined Formation	

LITHOLOGY: Brecciated Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Pelly Creek copper showing is located on the east side of Pelly Creek valley (Geological Survey of Canada Memoir 274, page 201), approximately 145 kilometres northwest of Germansen Landing. According to Memoir 274 (page 201), a 3.7-metre wide shear zone in brecciated limestone contains abundant pyrrhotite, with lesser amounts of pyrite, chalcopyrite and bornite. Although Map 1030A (Geological Survey of Canada Memoir 274) shows the hostrocks as part of the Hadrynian Ingenika Group, the more recent Geological Survey of Canada Paper 77-19 (page 3) shows them to be part of the Cambrian Atan Group.

BIBLIOGRAPHY

GSC MEM 274-201
GSC MAP 1030A
GSC P 77-19

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/25

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 068**

NATIONAL MINERAL INVENTORY: 094C15 Cu1

NAME(S): **CHOWIKA CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C16W 094C15E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 55 45 N
LONGITUDE: 124 29 55 W
ELEVATION: 1850 Metres

NORTHING: 6310501
EASTING: 408794

LOCATION ACCURACY: Within 5 KM

COMMENTS: Location is from Geological Survey of Canada Map 2-1975 (Paper 75-33).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Enargite Pyrite Covellite Chalcocite Tetrahedrite
COMMENTS: Possibly tetrahedrite.
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Cambrian

GROUP

Unnamed/Unknown Group

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Limestone
Dolomite
Sandstone
Sandy Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Chowika Creek copper prospect is located on the "steep side of a high limestone mountain at an elevation high above timber line" (Geological Survey of Canada Summary Report 1927) west of the headwaters of Chowika Creek 28 kilometres east of the north end of Williston Lake.

According to Summary Report 1927, "the showing consists of a mass of enargite several feet in length, enclosed in pure unaltered limestone. Below the enargite, the limestones over a large area are covered with malachite, giving the deposit, when viewed from a distance, the appearance of being much larger than it actually is. The ore consists almost entirely of well-crystallized enargite. Small amounts of pyrite and quartz can be seen in hand specimens and under the microscope small particles of covellite and chalcocite were seen, as well still smaller amounts of greyish mineral thought to be tetrahedrite."

Map 2-1975 (Geological Survey of Canada Paper 75-33) shows the area to be underlain by Middle Cambrian cream to orange crystalline dolomite underlain by sandstone and orange weathering sandy dolomite.

BIBLIOGRAPHY

GSC SUM RPT *1927A, p. 36
GSC MAP 207A
GSC P 75-33
GSC MAP 2-1975

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/26

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 069**

NATIONAL MINERAL INVENTORY: 094C3 Cu3

NAME(S): **CAT, BETTY, BET,
CAT MOUNTAIN**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 56 03 47 N
LONGITUDE: 125 21 36 W
ELEVATION: 1640 Metres

UTM ZONE: 10 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6215609
EASTING: 353067

COMMENTS: Trenches on the summit of Cat Mountain, 8 kilometres west-southwest of Uslika Lake and 3.5 kilometres north of Osilinka River, 70 kilometres north-northwest of Germansen Landing (Assessment Report 19956).

COMMODITIES: Gold Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Magnetite Chalcocite Gold
Bornite Copper Tetrahedrite Malachite Azurite

ASSOCIATED: Cuprite Chrysocolla
Magnetite Quartz Calcite Specularite
ALTERATION: Epidote Chlorite Pyrite Calcite K-Feldspar
Biotite Quartz Sericite

COMMENTS: Also malachite, azurite, cuprite and chrysocolla.
ALTERATION TYPE: Propylitic Potassic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein Stockwork
CLASSIFICATION: Porphyry Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Mesozoic	Takla	Plughat Mountain	Hogem Intrusive Complex

LITHOLOGY: Augite Andesite Basalt Porphyry
Andesite Ash Tuff
Andesite Lapilli Tuff
Andesite Basalt Agglomerate
Syeno Monzonite Porphyry
Hornblende Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Drill Core
COMMODITY
Gold 1.1900 Grams per tonne
Copper 0.1200 Per cent
COMMENTS: Sample across 97 metres.
REFERENCE: George Cross News Letter No. 128, July, 1991.

CAPSULE GEOLOGY

The Cat prospect, located on Cat Mountain, lies near Uslika Lake, just east of the contact between Takla Group volcanic rocks and the eastern edge of the Hogem Intrusive Complex. The Upper Triassic to Lower Juassic Takla Group and its southern equivalent, the Nicola Group, define the Quesnel Terrane or Quesnellia. The northwest-elongate Late Triassic to Early Cretaceous Hogem Intrusive Complex, 170 kilometres long and 40 kilometres wide, is intruded into this terrane.

The Cat property is underlain primarily by augite andesite-basalt porphyry, andesite ash tuff, andesite lapilli tuff and andesite-basalt agglomerate of the Upper Triassic Plughat Mountain Formation, Takla Group. These are intruded by

CAPSULE GEOLOGY

syenomonzonite porphyry and by a northwesterly trending, elongate body of hornblende diorite. Both intrusions are believed to be satellites of the Hogen Intrusive Complex which outcrops 2.5 kilometres west of the property.

A major northwest-striking fault following Anomaly Creek bisects the property. The Anomaly Creek fault strikes 040 degrees and dips 60 degrees northwest. Other, less prominent faults and shear zones strike north, north-northeast and northwest. Some of these faults appear to postdate alteration and mineralization (the Anomaly Creek fault) while others are mineralized. This suggests a complex faulting history which may involve reactivation of early, and possibly syn-intrusive structures (F. Ferri, personal communication, 1991).

High-angle faulting, striking approximately north and northwest (015 to 315 degrees) and dipping 75 to 90 degrees east, controls quartz-calcite and quartz-magnetite veins carrying copper and gold mineralization. Massive magnetite zones are localized along north and west-trending structures.

Three types of mineralization are evident on the property: 1) massive magnetite-quartz veins with associated copper-gold mineralization; 2) disseminated and; 3) fracture-filling copper mineralization.

Massive magnetite and magnetite-quartz-calcite veins, from 0.1 to 0.6 metre wide, are iron-stained and in part weathered to gossan and minor boxwork of limonite and quartz. The veins may contain variable amounts of chalcopyrite, pyrite, native gold, minor bornite, chalcocite, specular hematite, malachite and azurite. Other documented copper minerals identified include native copper, cuprite, tetrahedrite and chrysocolla (Assessment Report 7999).

Disseminations and fracture-filling chalcopyrite with secondary malachite, azurite and chalcocite occur within intrusive rocks, coarse fragmental basaltic augite porphyry flows, finer pyroclastics, and volcanic sediments. Propylitic (epidote, chlorite, pyrite, calcite) and potassic (potassium feldspar, biotite, quartz, sericite) alteration characterize mineralized rock.

Diamond drilling in 1990 yielded samples from an intersection which assayed 0.12 per cent copper and 1.19 grams per tonne gold across 97 metres (George Cross News Letter No. 128, July, 1991).

Four diamond-drill holes totalling 464 metres were drilled in the autumn of 1994 to test gold-copper mineralization intersected by earlier trenching and drilling. The current drilling of the Upper Copper zone was successful in confirming the previous results and extending the area of known mineralization to the north; the Upper Copper zone is open at depth (Assessment Report 23631).

In 1995, with Explore B.C. Program support, Lysander Gold Corporation carried out a modest program of geological mapping, sampling and 178.12 metres of diamond drilling in 3 holes on the Upper Copper zone. The drill program was unsuccessful because of inadequate equipment unable to penetrate the badly broken ground. This work did not improve or harm the potential of the Upper Copper zone - gold mineralization remains open at depth (Explore B.C. Program 95/96 - M87).

BIBLIOGRAPHY

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- EMPR EXPL 1975-E158; 1977-E212; 1979-263
- EMPR Explore B.C. Program 95/96 - M87
- EMPR FIELDWORK 1991, pp. 127-145
- EMPR GEM 1971-219; 1974-290,291
- EMPR INF CIRC 1991-21
- EMPR MAP 9
- EMPR OF 1992-11
- EMPR PF (News Release, Lysander Gold Corporation, Oct.12, 1990; Canstock.com Website (Apr. 1998): CAT Gold-Copper Property, Lysander Gold Corporation, 1 p.)
- EMR MP CORPFILE (Aalenian Resources Ltd.)
- GSC MAP 1030A
- GSC MEM 274
- GCNL #183, 1989; #86,#128, 1991
- MIN REV Winter 1996/97, p. 33
- PR REL Lysander Minerals Corp., June 18, 2002

DATE CODED: 1985/07/24
DATE REVISED: 1997/04/30

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 070**

NATIONAL MINERAL INVENTORY: 094C16 Cu1

NAME(S): **PIKA**, RL, MAC

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C16E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 58 08 N
LONGITUDE: 124 02 34 W
ELEVATION: 1600 Metres

NORTHING: 6314406
EASTING: 436602

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a wooded ridge in the Muswa Ranges (Assessment Report 4197, Map 4).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Hadrynian
Cambrian-Ordovician

GROUP

Misinchinka
Kechika

FORMATION

Undefined Formation
Mount April

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Chlorite Schist
Sericite Schist
Limestone
Argillaceous Limestone
Calcareous Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Muskwa Ranges

RELATIONSHIP:

GRADE: Greenschist

CAPSULE GEOLOGY

The Pika property is located on a wooded ridge in the Muskwa Ranges of the Rocky Mountains, 210 kilometres west-northwest of Fort St. John.

Sparse outcrops of copper mineralization are reported (Assessment Report 4197) to occur in the area of a 120-metre long geochemical soil anomaly (values up to 1240 parts per million copper). Chlorite and sericite schists, probably of the Hadrynian and Lower Cambrian Misinchinka Group, outcrop on the property. Outcrop is sparse however and Geological Survey of Canada Map 2-1975 shows the area to be underlain by the Upper Cambrian to Lower Ordovician Mount April Formation (Kechika Group) which consists of wavy banded limestone, argillaceous limestone and calcareous shale. No other information is available on the occurrence.

BIBLIOGRAPHY

EMPR ASS RPT *4197
EMPR GEM 1973-400
GSC P 75-33
GSC MAP 2-1975
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/27

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 071**

NATIONAL MINERAL INVENTORY: 094C3 Cu4

NAME(S): **OY**, DUD, TK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 51 N
LONGITUDE: 125 25 57 W
ELEVATION: 1190 Metres

NORTHING: 6232578
EASTING: 349148

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for the centre of the Oy and Dud claims which cover a northwest trending area for a length of 5 kilometres, stradling Tenakihi Creek (Claim map, 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite and rare specular hematite occur as fracture coatings, within quartz veins and as disseminations.

ASSOCIATED: Quartz
ALTERATION: Specularite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Mesozoic	Takla	Plughat Mountain	Hogem Intrusive Complex

LITHOLOGY: Andesite
Basalt
Monzonite
Diorite

HOSTROCK COMMENTS: Monzonite and diorite are in contact with Takla Group rocks.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Zeolite

CAPSULE GEOLOGY

The OY occurrence is located between a series of lakes near Tenakihi Creek, 80 kilometres northwest of Germansen Landing. Chalcopyrite occurs as fracture coatings, coarse grains in quartz veins and as minor disseminations over the entire property. Mineralization is hosted in Upper Jurassic to Lower Triassic Takla Group andesitic and basaltic rocks (mainly Upper Triassic Plughat Mountain Formation rocks) in close contact with monzonite and diorite phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. Specular hematite also occurs.

BIBLIOGRAPHY

EMPR GEM *1973-396
EMPR ASS RPT 21497
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/20

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 072**

NATIONAL MINERAL INVENTORY: 094C4 Cu6

NAME(S): **GAIL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 45 N
LONGITUDE: 125 32 20 W
ELEVATION: 1780 Metres

NORTHING: 6223359
EASTING: 342203

LOCATION ACCURACY: Within 500M

COMMENTS: Outcrop at the head of a cirque (Assessment Report 4599).

COMMODITIES: Copper

Molybdenum

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Molybdenite Bornite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE GROUP
Mesozoic

FORMATION

IGNEOUS/METAMORPHIC/OTHER
Hogem Intrusive Complex

LITHOLOGY: Biotite K-Feldspar Monzodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Gail showing is located in a north facing cirque, at the headwaters of Tenakihi Creek, approximately 60 kilometres northwest of Germansen Landing.

Pyrite, chalcopyrite, molybdenite and bornite are hosted in quartz veins within biotite-potassium feldspar monzodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex and within the intrusive rocks as well.

BIBLIOGRAPHY

EMPR GEM 1973-396
EMPR ASS RPT *4599
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/25

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 073**

NATIONAL MINERAL INVENTORY: 094C6 Pb2

NAME(S): **SWAN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 25 20 N
LONGITUDE: 125 27 52 W
ELEVATION: 1280 Metres

NORTHING: 6255798
EASTING: 347996

LOCATION ACCURACY: Within 500M

COMMENTS: Location of trench #1 (Assessment Report 4654, Map 3).

COMMODITIES: Lead Zinc Silver

MINERALS

SIGNIFICANT: Galena Sphalerite
ASSOCIATED: Barite
ALTERATION: Dolomite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform
CLASSIFICATION: Replacement Hydrothermal
TYPE: E12 Mississippi Valley-type Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	

LITHOLOGY: Dolomite
Massive Limestone
Quartzite
Chlorite Schist
Graphitic Slate
Siliceous Dolomite

HOSTROCK COMMENTS: The hostrocks are most likely part of the Middle Ordovician to Early Devonian Echo Lake Group (S. Dudka, personal communication, 1992).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1973

COMMODITY	GRADE	
Silver	4.1100	Grams per tonne
Lead	0.4800	Per cent
Zinc	1.7200	Per cent

COMMENTS: Sample width of 1.5 metres.
REFERENCE: Assessment Report 4654.

CAPSULE GEOLOGY

The Swan lead-zinc showings are located 15 kilometres east of Aiken Lake, approximately 90 kilometres northeast of Germansen Landing.

The hostrock is a northward-striking, west-dipping, massive white limestone which, upon recent examination, is now believed to be part of the Middle Ordovician to Early Devonian Echo Lake Group (Open File 1993-2). A generalized stratigraphic section (from Assessment Report 4655) is as follows:

- (1) impure quartzite
- (2) chlorite schist
- (3) massive white limestone
- (4) black thin-bedded fissile limestone
- (5) black graphitic slate
- (6) siliceous dolomite

Mineralization is hosted within a tan-weathering, medium to coarse-grained cream-coloured dolomite band near the top of the massive white limestone unit. The mineralization occurs as scattered lenses of galena and light brown sphalerite (Assessment Report 4655)

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RUN TIME: 11:51:27

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REPORT: RGEN0100

CAPSULE GEOLOGY

contained within the tan-weathering dolomite layer. Barite mineralization is associated with the lead-zinc. The highest assay from Trench #1 was 0.48 per cent lead, 1.72 per cent zinc and 4.11 grams per tonne silver across 1.5 metres (Assessment Report 4654).

BIBLIOGRAPHY

EMPR ASS RPT *4654, *4655
EMPR GEM 1972-478; 1973-399
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/03

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 074**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAIN**

MINING DIVISION: Omineca

STATUS: Prospect
 REGIONS: British Columbia
 NTS MAP: 094C12E
 BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 30 37 N
 LONGITUDE: 125 35 43 W
 ELEVATION: 1850 Metres

NORTHING: 6265892
 EASTING: 340299

LOCATION ACCURACY: Within 500M

COMMENTS: Location of the "A" showing (Assessment Report 4607, Map 2 (Figure 9)).

COMMODITIES: Lead Zinc Silver Barite

MINERALS

SIGNIFICANT: Galena Sphalerite Pyrite Barite

ALTERATION: Dolomite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated
 CLASSIFICATION: Replacement Epigenetic Industrial Min.
 TYPE: E12 Mississippi Valley-type Pb-Zn
 SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Paleozoic	Atan	Mount Kison	

LITHOLOGY: Limestone
 Dolomite
 Sandstone
 Grit
 Graphitic Argillite
 Slate

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE:

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	3.1000	Grams per tonne
Barite	52.7000	Per cent
Lead	4.5300	Per cent
Zinc	4.2000	Per cent

COMMENTS: The barite assay is actually reported as barium.

REFERENCE: Assessment Report 4607.

CAPSULE GEOLOGY

The Rain property is located 13 kilometres northeast of Aiken Lake in the northeastern part of the Lay Range, between the Mesilinka and Swannell rivers.

The hostrock is a northwest-striking, southwest-dipping thickly-bedded grey limestone overlying quartzose sandstone, grit and green argillite. The carbonate is overlain by a thin black carbonate unit succeeded by slate and graphitic argillite. The hostrocks are not known with certainty but are thought to be part of the Lower Cambrian Atan Group, Mount Kison Formation (Open File 1993-2).

Tan dolomitic zones are developed in the grey limestone unit and lead-zinc-barite mineralization occurs in a creamy white coarsely crystalline phase of the dolomite (Assessment Report 4607). Two showings are known. The "A" showing consists of a layer of disseminated galena, honey-coloured fine-grained sphalerite and minor pyrite in a banded massive limestone. A grab sample assayed 0.82 per cent lead, 3.68 per cent zinc, 3.4 grams per tonne silver and 14.5 per cent barium (Assessment Report 4607). The "B" showing is located

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CAPSULE GEOLOGY

750 metres east-southeast of the "A" and is exposed over a length of 210 metres in three trenches. Although not continuous, the mineralization is exposed over a width of 9 metres. One hand sample assayed 4.53 per cent lead, 4.20 per cent zinc, 3.12 grams per tonne silver and 31.0 per cent barium (Assessment Report 4607).

BIBLIOGRAPHY

EMPR ASS RPT 4606, *4607
EMPR GEM 1972-478; 1973-399; 1974-293
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/28

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 075**

NATIONAL MINERAL INVENTORY: 094C5 Cu3

NAME(S): **SARAH**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 29 12 N
LONGITUDE: 125 58 02 W
ELEVATION: 2100 Metres

NORTHING: 6264192
EASTING: 317305

LOCATION ACCURACY: Within 500M

COMMENTS: Location of 30-centimetre wide chalcopyrite-bearing vein (Assessment Report 21521, Map 1).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Bornite
ALTERATION: Epidote Chlorite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Jurassic

GROUP

Takla

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Hornblende Diorite
Quartz Diorite
Andesite
Basalt
Aplite
Quartz Feldspar Porphyry

HOSTROCK COMMENTS: The Jurassic or older hostrock is possibly related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Channel

COMMODITY

GRADE

Silver	55.5000	Grams per tonne
Gold	7.5000	Grams per tonne
Copper	5.2800	Per cent

COMMENTS: A 30-centimetre wide sample of a semimassive chalcopyrite vein.

REFERENCE: Assessment Report 4565.

CAPSULE GEOLOGY

The Sarah occurrence is located at the west end of Sarah cirque, approximately 110 kilometres northwest of Germansen Landing.

The property is underlain by andesite and basalt flows (Geology, Exploration and Mining in B.C. 1973, page 398) of the Upper Triassic Takla Group (Plughat Mountain Formation) which are intruded by the "Croydon Creek stock", a Jurassic or older intrusion possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The stock varies from hornblende to quartz diorite and from fine grained to pegmatitic, and is in turn cut by late aplite and quartz feldspar porphyry dikes.

Pyrite, chalcopyrite and malachite with very minor bornite coat fractures in the mafic intrusion and are disseminated in clots of hornblende and pyroxene. Most assays over more than a metre are less than 0.1 per cent copper, however one 30-centimetre wide vein assayed 5.28 per cent copper, 7.5 grams per tonne gold and 55.5 grams per tonne silver (Assessment Report 4565). Epidote and chlorite are the

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RUN TIME: 11:51:27

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CAPSULE GEOLOGY

main alteration minerals associated with the mineralization.

BIBLIOGRAPHY

EMPR ASS RPT 4565
EMPR GEM 1973-398
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274, p. 165

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/24

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 076**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAVE** THANE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 10 N
LONGITUDE: 125 19 51 W
ELEVATION: 1250 Metres

NORTHING: 6221821
EASTING: 355095

LOCATION ACCURACY: Within 1 KM

COMMENTS: Outcrop on ridge crest (Assessment Report 4619).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Magnetite Specularite
COMMENTS: Sulphides are disseminated and associated with fractures.

ASSOCIATED: Quartz Epidote Specularite

ALTERATION: Epidote Chlorite Calcite Silica

COMMENTS: Pervasive propylitic alteration is strongest near fractures.

ALTERATION TYPE: Propylitic Silicific'n

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein

CLASSIFICATION: Hydrothermal Epigenetic Porphyry

TYPE: L03 Alkaic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Mesozoic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Andesitic Flow
Andesitic Tuff
Monzonite
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Quesnel

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Zeolite

CAPSULE GEOLOGY

The Dave showing is located on the north side of Thane Creek in the Omineca Mountains, approximately 200 kilometres northwest of Fort St. James.

The occurrence lies centrally in the Omineca Belt within the northwest-trending Quesnel Terrane. The showing is hosted in Upper Triassic to Lower Jurassic Takla Group andesitic flows and tuffs near the contact with monzonites of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The Takla rocks, in the showing area, are divided by a fault into the Upper Triassic Plughat Mountain Formation to the west, and an unnamed Upper Triassic to Lower Jurassic unit to the east, possibly equivalent to the Chuchi Lake Formation (Takla Group) (Fieldwork 1991, pages 137-139).

The main showing consists of chalcopyrite, magnetite and specularite, infilling a 1-metre wide silicified fracture zone within propylitically altered andesitic flows. Other showings in the area consist of limonitic gossans occurring along fault and fracture planes. Several quartz-epidote and quartz-specularite veins with disseminated chalcopyrite are also noted.

BIBLIOGRAPHY

EMPR AR 1953-94
EMPR GEM 1973-396; 1974-291
EMPR ASS RPT *4619, 5248
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/13

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 077**

NATIONAL MINERAL INVENTORY:

NAME(S): **ND**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 00 56 N
LONGITUDE: 125 31 59 W
ELEVATION: 1480 Metres

NORTHING: 6210706
EASTING: 342102

LOCATION ACCURACY: Within 1 KM

COMMENTS: A quartz vein outcrops in the southwest corner of the ND claims south of Haha Creek (Assessment Report 5602).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Bornite
ALTERATION TYPE: Potassic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: K-Feldspar Syenite
Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The ND occurrence is located at the headwaters of Haha Creek, 20 kilometres southwest of Uslika Lake and 65 kilometres west-northwest of Germansen Landing. The occurrence lies centrally in the Omineca Belt within the Quesnel Terrane.

Disseminated chalcopyrite, pyrite and rare bornite are hosted in the Early to Middle Jurassic Duckling Creek Syenite Complex within the Late Triassic to Early Cretaceous Hogem Intrusive Complex. Potassic and propylitic alteration are evident in the syenite and monzonite host rocks.

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EMPR GEM 1973-379; 1974-292,281-283
EMPR EXPL 1975-151; 1976-E170
EMPR ASS RPT 4737, 5130, 5251, 5252, 5557, *5602, 5751, 5957
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/22

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 078**

NATIONAL MINERAL INVENTORY: 094C5 Mo1

NAME(S): **GROUSE** ABE 8

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 19 47 N
LONGITUDE: 125 48 28 W
ELEVATION: 1500 Metres

NORTHING: 6246319
EASTING: 326406

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of molybdenum anomaly on the Grouse claims (Assessment Report 3267).

COMMODITIES: Molybdenum

MINERALS

SIGNIFICANT: Molybdenite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkaalic porphyry Cu-Au
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Granite
Granodiorite
Syenite
Hornblende Diorite
Amphibolite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Grouse molybdenum occurrence is located on the north side of the unnamed creek which drains into the northwest end of Tutizzi Lake, 91 kilometres northwest of Germansen Landing.

The hostrocks are plutonic rocks of the Late Triassic to Early Cretaceous Hogem Intrusive Complex which includes granite, granodiorite, syenite, hornblende diorite and amphibolite. The occurrence consists of minor molybdenite mineralization in a single 40-centimetre wide quartz vein (Exploration in British Columbia 1978, page E242). A 1200 by 400 metre soil molybdenum geochemical anomaly, with values up to 0.017 per cent, is present on the property (Assessment Report 3267).

BIBLIOGRAPHY

EMPR ASS RPT 3267, 22121, 22860
EMPR EXPL *1978-E241
EMPR GEM 1971-60
GSC MAP 1030A
GSC MEM 274
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/18

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 079**

NATIONAL MINERAL INVENTORY: 094C5 Ag2

NAME(S): **NEL**, MOUNT LAY, LIL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E 094C06W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 29 32 N
LONGITUDE: 125 30 11 W
ELEVATION: 1260 Metres

NORTHING: 6263672
EASTING: 345899

LOCATION ACCURACY: Within 500M

COMMENTS: Location of showing (Assessment Report 4880).

COMMODITIES: Silver Copper Zinc Lead Gold

MINERALS

SIGNIFICANT: Galena Tetrahedrite Pyrargyrite Argentite Chalcopyrite

Pyrite Freibergite

ASSOCIATED: Quartz

ALTERATION: Silica Sericite Clay

ALTERATION TYPE: Silicific'n Sericitic Argillic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Shear

CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Swannell

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Muscovite Quartz Schist
Quartz Biotite Muscovite Schist
Granophyre
Felsite Dike
Quartzite
Schist
Quartz Mica Schist

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	185.2000	Grams per tonne
Gold	0.2400	Grams per tonne
Copper	0.3800	Per cent
Lead	1.3900	Per cent
Zinc	3.1500	Per cent

REFERENCE: Assessment Report 4880.

CAPSULE GEOLOGY

The Nel showing is located 16 kilometres east-northeast of Aiken Lake, approximately 95 kilometres northwest of Germansen Landing.

Assessment Report 4880 reports "two narrow pockets of rusty, highly leached gouge (?) material of only a few inches width...from which a grab sample" assayed 0.24 gram per tonne gold, 185.2 grams per tonne silver, 0.38 per cent copper, 1.39 per cent lead and 3.15 per cent zinc. No sulphide minerals were identified, and bedrock is reported to be muscovite quartz schist (Assessment Report 4880) of the Upper Proterozoic (Hadrynian) Ingenika Group, Swannell Formation.

Geological Survey of Canada Memoir 274 (page 200) reports small veins containing galena, tetrahedrite and ruby silver (pyrargyrite) in quartzites and schists south of Mount Lay. Assessment Reports 15840 and 11204 report quartz mica schist hosting narrow, crosscutting vuggy veins and breccias carrying pyrite and possibly chalcopyrite with silver minerals (tetrahedrite, argentite and minor pyrargyrite). The veins strike 040 degrees, dipping 32 to 50 degrees

CAPSULE GEOLOGY

southeast. Silicification and sericite-pyrite alteration is evident in the vicinity of the veins which are also weathered and altered to clay. Hostrocks are schistose quartz-biotite-muscovite schists with thick concordant quartz layers, cut by granophyre (felsite) dikes (Assessment Report 15840).

Canasil Resources Inc. sampled the property in 1998.

BIBLIOGRAPHY

EMPR ASS RPT 4880, 11204, *15840
EMPR FIELDWORK 1991, pp. 127-145; 1992, pp. 109-134
EMPR GEM 1974-292
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274
GCNL #41(Feb.27), #119(June 22), #213(Nov.5), 1998

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/03

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 080**

NATIONAL MINERAL INVENTORY: 094C3 Zn2

NAME(S): **GREG**, OSS, PAR

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E 094C02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 05 42 N
LONGITUDE: 125 00 22 W
ELEVATION: 1350 Metres

NORTHING: 6218467
EASTING: 375200

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for the Greg 6 claim which covers a trenched ridge crest northeast of Wasi Lake. (Assessment Report 4620).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Jurassic
Pennsylvan.-Permian

GROUP

Otter Lakes
Nina Creek

FORMATION

Undefined Formation
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Limestone
Dolomite
Basalt
Andesite
Andesitic Tuff
Shale
Quartzite
Chert
Argillite
Gabbro

HOSTROCK COMMENTS: The hosts rocks are a primarily carbonate sequence consisting of several groups of Cambrian to Middle Devonian age.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Slide Mountain
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Zeolite

CAPSULE GEOLOGY

The Greg showing is located on a ridge crest, northeast of Wasi Creek and approximately 200 kilometres northwest of Fort St. James.

The occurrence is located near the contact of carbonate rock (on the north) with a volcanic unit (on the south). The carbonate rock is part of a Lower Cambrian to Middle Devonian package comprising rocks of the Atan, Razorback, Echo Lake and Otter Lakes groups consisting of limestone, dolomite, lesser shale, quartzite and argillaceous limestone. The volcanic rocks presumably belong to the Pennsylvanian to Permian Nina Creek Group (equivalent to the Slide Mountain Group) comprised of massive and pillowed basalt, argillite, chert, gabbro, wacke and felsic tuff (Fieldwork 1991).

The showing reportedly consists of disseminated sphalerite and galena within a blackish limestone unit (probably of the Middle Ordovician to Lower Devonian Echo Lake Group or the Middle Devonian Otter Lakes Group), at or near the contact of andesitic flows and tuffs (Assessment Report 4620; Geology and Exploration in B.C. 1974).

BIBLIOGRAPHY

EMPR GEM 1973-390; *1974-290
EMPR ASS RPT *4620
EMPR OF 1992-11
EMPR FIELDWORK 1989, pp. 101-114; 1991, pp. 127-145; 1992, pp. 109-134
EMPR BULL 91

DATE CODED: 1985/07/24
DATE REVISED: 1992/06/10

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 080**

MINFILE NUMBER: **094C 081**

NATIONAL MINERAL INVENTORY:

NAME(S): **MES**, CZECK, CHEROKEE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 24 48 N
LONGITUDE: 125 37 39 W
ELEVATION: 1080 Metres

NORTHING: 6255181
EASTING: 337904

LOCATION ACCURACY: Within 500M

COMMENTS: Location is from figure 2 (claim map), Assessment Report 5977.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Paleozoic-Mesozoic	Undefined Group	Undefined Formation	

LITHOLOGY: Volcanic
Quartz Monzonite
Pyritic Argillite
Granodiorite

HOSTROCK COMMENTS: The hostrocks are part of the "problematic unit" (Fieldwork 1992).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Mes property is located north of the Mesilinka River, 6 kilometres east of Aiken Lake, 92 kilometres northwest of Germansen Landing.

The hostrocks have recently been reassigned to the "problematic unit" by Ferri et al., a fault bounded section of steeply dipping Paleozoic of Mesozoic sedimentary and volcanic rocks (Fieldwork 1992; Open File 1993-2).

Pyrite and minor chalcopyrite are reported to occur in fractures in volcanic rocks that occur near a quartz monzonite intrusion, possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex (Exploration in B.C. 1976, page E172). Volcanic rocks and pyritic argillites are intruded by granodiorite (Assessment Report 5977).

BIBLIOGRAPHY

EMPR EXPL 1975-E159, *1976-E172
EMPR ASS RPT 5977, 20497
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/12

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 082**

NATIONAL MINERAL INVENTORY: 094C6 Pb1

NAME(S): **BURN (CRAG)**, CRAG

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 27 30 N
LONGITUDE: 125 29 28 W
ELEVATION: 1300 Metres

NORTHING: 6259875
EASTING: 346497

LOCATION ACCURACY: Within 500M

COMMENTS: Location from Assessment Report 4605, Figure 2.

COMMODITIES: Lead Zinc Silver

MINERALS

SIGNIFICANT: Galena Sphalerite Pyrite Cerussite Barite

ALTERATION: Dolomite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Vein Breccia
CLASSIFICATION: Replacement Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Cambrian Atan Mount Kison

LITHOLOGY: Dolomite
Massive Limestone
Black Shale
Grit
Chlorite Schist
Quartzite
Siliceous Dolomite
Black Slate

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE:

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	188.6000	Grams per tonne
Barite	0.4800	Per cent
Lead	5.0000	Per cent
Zinc	2.8000	Per cent

REFERENCE: Assessment Report 4605.

CAPSULE GEOLOGY

The Burn (Crag) lead-zinc occurrence is located 16 kilometres east-northeast of Aiken Lake, approximately 97 kilometres northeast of GERMANSAN LANDING.

The hostrock is a northwest-striking, southeast-dipping massive white limestone recently reassigned to the Lower Cambrian Atan Group, Mount Kison Formation (Open File 1993-2). A generalized stratigraphic section (from Assessment Report 4605) is as follows:

- (1) coarse grit with conglomerate lenses
- (2) green chlorite schist
- (3) massive white limestone
- (4) grey fine-grained dolomite
- (5) siliceous dolomite capped by white quartzite
- (6) pyritic, graphitic siliceous black slate

The showing is exposed in two outcrops and in trenches. It consists of narrow seams of fine-grained galena in a 1-metre wide east-striking tan dolomitic zone which crosscuts massive white limestone. Some of the dolomitic zones are "breccia-like" with grey dolomitic fragments in a coarse dolomitic or calcitic cement. Sphalerite is minor, as is pyrite. Some cerussite was identified in

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CAPSULE GEOLOGY

polished section. A grab sample assayed 5.0 per cent lead, 2.8 per cent zinc, 188.6 grams per tonne silver and 0.48 per cent barium (Assessment Report 4605). Barite lenses outcrop in black shale 900 metres southeast of the showing.

BIBLIOGRAPHY

EMPR ASS RPT *4605, 4608
EMPR GEM 1972-477; 1973-398
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1985/07/24
DATE REVISED: 1992/10/14

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 083**

NATIONAL MINERAL INVENTORY:

NAME(S): **TENAKIHI RANGE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 13 24 N
LONGITUDE: 125 09 23 W
ELEVATION: 1480 Metres

NORTHING: 6233028
EASTING: 366299

LOCATION ACCURACY: Within 5 KM

COMMENTS: Location is 6.5 kilometres east of Mile 55 on the Aiken Lake winter road (Memoir 274, page 50).

COMMODITIES: Silica

MINERALS

SIGNIFICANT: Silica Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Concordant
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Swannell

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Garnet Mica Schist
Quartzite
Feldspathic Sandstone
Phyllite
Limestone
Arkosic Wacke
Schist

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Amphibolite

CAPSULE GEOLOGY

The Tenakihi Range quartz vein is located in the low hills of the Tenakihi Range, 6.5 kilometres east of Mile 55 on the old Aiken lake winter road (Geological Survey of Canada Memoir 274, page 50).

Hostrocks are metamorphosed sedimentary rocks of the Hadrynian Ingenika Group (probably the Swannell Formation) which have been metamorphosed to grades beyond the garnet isograd to upper greenschist-lower amphibolite grade. Lithologies include impure quartzite, garnet mica schist, schist, phyllite, limestone, feldspathic sandstone and arkosic wacke (Fieldwork 1991, page 131). Metamorphogenic quartz veins are common in the rocks at higher metamorphic rank. Many are relatively pure quartz with very minor muscovite, biotite and tourmaline. The veins are generally concordant, and range in thickness from 1 to 5 metres. The largest vein is 180 by 55 metres in size and at least 8 metres in thickness.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM *274, p. 50
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/21

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 084**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLOOM CIRQUE SKARNS**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 28 31 N
LONGITUDE: 125 57 00 W
ELEVATION: 2240 Metres

NORTHING: 6262879
EASTING: 318311

LOCATION ACCURACY: Within 500M

COMMENTS: Location is from Figure 7c, Geology Map, East Half, Assessment Report 21521.

COMMODITIES: Copper Iron

MINERALS

SIGNIFICANT: Chalcopyrite Magnetite
ALTERATION: Epidote Diopside Garnet Malachite Azurite
ALTERATION TYPE: Skarn Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
SHAPE: Tabular
DIMENSION:

STRIKE/DIP: 090/08N

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Jurassic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Andesitic Flow
Andesitic Breccia
Epidote Diopside Garnet Skarn
Magnetite Skarn
Limestone
Hornblende Diorite
Quartz Diorite
Basalt
Tuff
Agglomerate

HOSTROCK COMMENTS: The Jurassic of older intrusion may be related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

CAPSULE GEOLOGY

The Bloom Cirque Skarns are located on the ridge east of Bloom cirque, 110 kilometres northwest of Germansen Landing.

Assessment Report 21521 (volume 1, page 24) reports "four occurrences of magnetite skarn...along the margins of Bloom cirque. Very minor chalcopyrite with malachite and azurite occur locally within epidote (diopside-garnet) skarn which borders a magnetite skarn bed on the east side of the cirque. The skarn zone strikes roughly east-west, dips north at 8 degrees and has a minimum thickness of 4 metres". The mineralization is reported to be sparse and erratic.

The hostrocks are altered calcsilicate horizons within the Upper Triassic Takla Group (Plughat Mountain Formation) which consists of andesite flows and breccias, basalt, tuff, agglomerate, shale, conglomerate and limestone (Geological Survey of Canada Memoir 274). Hornblende diorite and quartz diorite, related to a Jurassic or older intrusion, outcrops approximately 100 metres west of the occurrence.

BIBLIOGRAPHY

EMPR ASS RPT *21521
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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REPORT: RGEN0100

BIBLIOGRAPHY

GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/03/24
DATE REVISED: 1992/08/23

CODED BY: RHM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 085**

NATIONAL MINERAL INVENTORY:

NAME(S): **OSILINKA RIVER**, TENAKIHI CREEK

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 09 34 N
LONGITUDE: 125 05 42 W
ELEVATION: 1463 Metres

NORTHING: 6225802
EASTING: 369889

LOCATION ACCURACY: Within 500M

COMMENTS: Centered on ridge crest north of Osilinka River, east of Tenakihi Creek (Geological Survey of Canada Map 1030A).

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
ASSOCIATED: Muscovite Siderite
MINERALIZATION AGE: Hadrynian

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 3000 x 1000 Metres STRIKE/DIP: 360/40W TREND/PLUNGE:
COMMENTS: Limestone strikes north, dips 30 to 40 degrees west.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Hadrynian	Ingenika	Espee	

LITHOLOGY: Limestone
Schist
Slate
Phyllite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP: Post-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Grab
COMMODITY: Limestone GRADE: 54.3200 Per cent

COMMENTS: Grade given for calcium oxide.
REFERENCE: Geological Survey of Canada Memoir 274, page 68, Sample 23R.

CAPSULE GEOLOGY

A thick limestone member of the Hadrynian (Upper Proterozoic) Ingenika Group, Espee Formation outcrops as a 1000-metre wide band extending north-northeast from the Ingenika River for 3000 metres, where it is truncated by a fault. The limestone and enclosing schist, slate and phyllite strike north and dip 30 to 40 degrees west.

The limestone, on the crest of a ridge north of the Osilinka River just east of Tenakihi Creek, is pale purple and buff grey, fine grained and poorly bedded. A sample from about the middle of the limestone member analysed 54.32 per cent CaO, 0.51 per cent MgO, 2.30 per cent insolubles, 0.77 per cent Al₂O₃ and Fe₂O₃, 41.14 per cent CO₂ and 1.58 per cent water (Geological Survey of Canada Memoir 274, page 68, Sample 23R).

A sample of ivory-coloured, granular limestone taken on the east side of Tenakihi Creek valley, just north of the Osilinka River, analysed 48.86 per cent CaO, 0.34 per cent MgO, 8.50 per cent insolubles, 2.44 per cent Al₂O₃ and Fe₂O₃, 39.20 per cent CO₂ and 0.72 per cent water (Geological Survey of Canada Memoir 294, page 68, Sample 33W). The limestone contained abundant muscovite flakes up to

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CAPSULE GEOLOGY

1 millimetre long. This sample was taken 120 metres stratigraphically above the previous sample. Beds of limestone in this vicinity have been locally replaced by siderite.

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 221-226; 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM *274, pp. 67-69
GSC MAP 1030A
GSC P 71-1A, pp. 23-28; 74-1A, pp. 17,18; 77-19, pp. 5,7-10

DATE CODED: 1985/07/24
DATE REVISED: 1989/10/05

CODED BY: GSB
REVISED BY: PSF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 086**

NATIONAL MINERAL INVENTORY:

NAME(S): **LOOKOUT HILL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C11E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 41 12 N
LONGITUDE: 125 10 21 W
ELEVATION: 796 Metres

NORTHING: 6284617
EASTING: 366931

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of limestone outcrop on Lookout Hill, just north of Delkluz Lake (Geological Survey of Canada Map 1030A).

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
ASSOCIATED: Siderite
MINERALIZATION AGE: Hadrynian

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 1300 x 760 Metres
COMMENTS: Area of limestone outcrop.

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: Post-mineralization

GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1954

SAMPLE TYPE: Grab

COMMODITY

GRADE

Limestone 55.3000 Per cent

COMMENTS: Sample 221C from near the summit of Lookout Hill. Grade given for calcium oxide.

REFERENCE: Geological Survey of Canada Memoir 274, page 64, Sample 216C.

CAPSULE GEOLOGY

Hadrynian Ingenika Group limestone underlies a 1300 by 760 metre area on Lookout Hill just south of the Ingenika River, 20 kilometres southwest of Williston Lake. Two grab samples gave the following analysis (in per cent) (Geological Survey of Canada Memoir 274, page 69, Samples 216C, 221C):

Sample	CaO	MgO	Insol.	Al2O3+Fe2O3	CO2	Water
216C	52.24	1.68	2.72	0.80	42.04	0.88
221C	55.30	0.20	0.50	0.60	42.66	0.86

Sample 216C is of fine-grained, thinly-bedded grey limestone exposed on the south slope of Lookout Hill, near the shore of Delkluz Lake.

Sample 221C is of white, coarse-grained recrystallized, bedded limestone near the summit of Lookout Hill.

BIBLIOGRAPHY

GSC MEM *274, pp. 67-69
GSC MAP 1030A
GSC P 71-1A, pp. 23-28; 74-1A, pp. 17,18; 77-19, pp. 5,7-10

DATE CODED: 1985/07/24
DATE REVISED: 1989/10/05

CODED BY: GSB
REVISED BY: PSF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 087**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT LAY**, SWANNELL RIVER

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C11W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 33 57 N
LONGITUDE: 125 28 02 W
ELEVATION: 1524 Metres

NORTHING: 6271783
EASTING: 348399

LOCATION ACCURACY: Within 1 KM

COMMENTS: Location of sample 181C, on the centre of a ridge crest, 5.15 kilometres northeast of the summit of Mount Lay (Geological Survey of Canada Memoir 274, page 69),.

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
ASSOCIATED: Siderite
MINERALIZATION AGE: Hadrynian

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone

DIMENSION:
COMMENTS: Limestone strikes north and dips 40 degrees west.

STRIKE/DIP: 360/40W

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP
Hadrynian Ingenika

FORMATION
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: Post-mineralization

GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY

YEAR: 1954

Limestone

GRADE
50.5800 Per cent

COMMENTS: Grade given for calcium oxide.

REFERENCE: Geological Survey of Canada Memoir 274, page 68, Sample 181C.

CAPSULE GEOLOGY

Limestone of the Hadrynian Ingenika Group is exposed along the crest of a ridge 4.8 kilometres northwest of the summit of Mount Lay, west of the Swannell River. The limestone strikes north and dips 40 degrees west.

The deposit is comprised of massive to platy, light pinkish grey, fine-grained limestone displaying round markings 1 to 3 millimetres in diameter, which resemble algal structures. In places, the limestone has been replaced by buff to reddish brown, generally coarse-grained siderite. A grab sample analysis yielded 50.58 per cent CaO, 1.68 per cent MgO, 5.16 per cent insolubles, 0.92 per cent Al₂O₃+Fe₂O₃, 41.06 per cent CO₂ and 1.38 per cent water (Geological Survey of Canada Memoir 274, page 68, Sample 181C).

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 221-226
GSC MEM *274, pp. 67-69
GSC MAP 1030A
GSC P 71-1A, pp. 23-29; 74-1A, pp. 17,18; 77-19, pp. 5,7-10

DATE CODED: 1985/07/24
DATE REVISED: 1989/10/05

CODED BY: GSB
REVISED BY: PSF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 088**

NATIONAL MINERAL INVENTORY:

NAME(S): **SWANNELL RIVER**, ORION CREEK

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C12W 094C12E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 34 42 N
LONGITUDE: 125 45 25 W
ELEVATION: 1524 Metres

NORTHING: 6273851
EASTING: 330658

LOCATION ACCURACY: Within 500M

COMMENTS: A Limestone outcrop on the north side of Swannell River, just west of Orion Creek (Geological Survey of Canada Map 1030A).

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
ASSOCIATED: Sericite Chlorite Quartz
MINERALIZATION AGE: Hadrynian

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Folded
DIMENSION: 2500 Metres STRIKE/DIP: 135/35W TREND/PLUNGE:
COMMENTS: Limestone outcrops for 2500 metres.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Hadrynian Ingenika Undefined Formation

LITHOLOGY: Limestone
Schist
Slate
Phyllite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Grab
COMMODITY GRADE
Limestone 49.2400 Per cent
COMMENTS: Taken 1250 metres above the base of the Ingenika Group. Grade given for calcium oxide.
REFERENCE: Geological Survey of Canada Memoir 274, page 68, Sample 204R.

CAPSULE GEOLOGY

Hadrynian Ingenika Group limestones outcrop along the northeast side of Swannell River for 2500 metres, just west of Orion Creek. The strata strikes 135 degrees and dips 35 degrees southwest on the southwest limb of a northwest-trending anticline cored by underlying schist, slate and phyllite of the Ingenika Group.

At 1250 metres above the base of the Ingenika Group, the limestone is ivory-buff to rose-yellow coloured and poorly bedded to slaty with very thin sericitic and chloritic partings. An analysis of a grab sample yielded 49.24 per cent CaO, 0.36 per cent MgO, 9.50 per cent insolubles, 1.08 per cent Al₂O₃+Fe₂O₃, 38.78 per cent CO₂ and 0.68 per cent water (Geological Survey of Canada Memoir 274, page 68, Sample 204R).

Up section, 366 metres, the rock is comprised of pale green and silver-buff, banded, sugary textured, micaceous limestone containing numerous sericitic flakes and a few scattered grains of detrital quartz. The matrix consists of sheared, medium-grained recrystallized calcite. A grab sample analysis yielded 38.42 per cent CaO, 2.60 per cent MgO, 22.34 per cent insolubles, 3.86 per cent

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CAPSULE GEOLOGY

Al₂O₃+Fe₂O₃, 31.64 per cent CO₂ and 1.88 per cent water (Geological Survey of Canada Memoir 274, page 68, Sample 203R).

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 221-226
GSC MEM *274, pp. 67-69
GSC MAP 1030A
GSC P 71-1A, pp. 23-28; 74-1A, pp. 17,18; 77-19, pp. 5,7-10

DATE CODED: 1985/07/24
DATE REVISED: 1989/10/05

CODED BY: GSB
REVISED BY: PSF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 089**

NATIONAL MINERAL INVENTORY:

NAME(S): **BUTLER RANGE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C11E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 37 16 N
LONGITUDE: 125 04 51 W
ELEVATION: 1554 Metres

NORTHING: 6277147
EASTING: 372323

LOCATION ACCURACY: Within 1 KM

COMMENTS: Sample site 389R, 4.8 kilometres due south of the summit of Ingenika Cone (Geological Survey of Canada Memoir 274, page 68).

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
MINERALIZATION AGE: Hadrynian

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 9999 Metres STRIKE/DIP:
COMMENTS: Limestone trends northwest and continues southeast for at least 10 kilometres.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Hadrynian	Ingenika	Undefined Formation	
Hadrynian			Wolverine Complex

LITHOLOGY: Limestone
Gneiss
Migmatite
Amphibolite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Grab
COMMODITY GRADE
Limestone 54.8200 Per cent
COMMENTS: Grade given for calcium oxide.
REFERENCE: Geological Survey of Canada Memoir 274, page 68, Sample 389R.

CAPSULE GEOLOGY

A band of limestone of the Hadrynian Ingenika Group outcrops 5 kilometres south of Ingenika Cone on the north end of the Butler Range. This band continues southeastward for at least 10 kilometres along the east flank of a belt of gneiss, migmatite and amphibolite of the Wolverine Complex. The Wolverine Complex rocks are metamorphic equivalents of the Ingenika Group which metamorphosed in the Jurassic.

The limestone is light grey, medium grained and well bedded. Streaks of white, slightly coarser-grained and thinly-bedded carbonate accompany the limestone. A sample taken 4.8 kilometres due south of the summit of Ingenika Cone analysed 54.82 per cent CaO, 0.21 per cent MgO, 0.76 per cent insolubles, 0.18 per cent Al₂O₃+Fe₂O₃, 43.14 per cent CO₂ and 0.70 per cent water (Geological Survey of Canada Memoir 274, page 68, Sample 389R).

BIBLIOGRAPHY

EMPR FIELDWORK 1988, pp. 221-226
GSC MEM *274, pp. 67-69
GSC MAP 1030A

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BIBLIOGRAPHY

GSC P 71-1A, pp. 23-28; 74-1A, pp. 17,18; 77-19, pp. 5,7-10

DATE CODED: 1985/07/24
DATE REVISED: 1989/10/05

CODED BY: GSB
REVISED BY: PSF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 090**

NATIONAL MINERAL INVENTORY:

NAME(S): **AIKEN LAKE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E 094C12E 094C12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 29 17 N
LONGITUDE: 125 42 21 W
ELEVATION: 1800 Metres

NORTHING: 6263682
EASTING: 333400

LOCATION ACCURACY: Within 5 KM

COMMENTS: Location of the Polaris Ultramafic Complex (Map 1030A, Geological Survey of Canada Memoir 274).

COMMODITIES: Chromium Chrysotile Asbestos

MINERALS

SIGNIFICANT: Chromite Chrysotile
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Triassic-Jurassic

DEPOSIT

CHARACTER: Layered Podiform Disseminated
CLASSIFICATION: Magmatic Metamorphic Hydrothermal Industrial Min.
TYPE: M03 Podiform chromite M06 Ultramafic-hosted asbestos

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic			Polaris Intrusive Complex

LITHOLOGY: Serpentinite
Peridotite
Dunite
Pyroxenite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Polaris Ultramafic Complex is located in the Lay Range east of Polaris Creek, approximately 7 kilometres northeast of Aiken Lake. The Middle Triassic to Early Jurassic (?) Polaris Ultramafic Complex is composed of peridotite, dunite and pyroxenite, some of which is altered to serpentine (Geological Survey of Canada Memoir 274, page 141). According to Memoir 274 (page 142), the serpentine is host to "a few thin bands of grey, flexible, asbestiform chrysotile...in the west-central and southeastern parts of the stock east of Polaris Creek". In a few cases the serpentine bodies contain isolated "ball-like masses of chromite" up to 5 centimetres in diameter. Chromite also occurs (Geological Survey of Canada Memoir 274, pages 126, 131) as disseminated grains up to 3 millimetres in size as well as in layers up to 30 centimetres thick which contain up to 5 per cent chromite. The layers vary from a string of single grains to lacy networks covering a square metre or more, and to dense masses 15 centimetres or more thick and a metre or more long. One "mass" of chromium-rich oxides reaches a length of about 3.6 metres and a width of 12 centimetres (Geological Survey of Canada Memoir 274, page 126). Prospecting for platinum group metals has delineated stream sediment geochemical anomalies but no bedrock occurrences (Assessment Reports 15955, 16236, 16574, 16628).

BIBLIOGRAPHY

EMPR ASS RPT *15955, 16236, 16574, 16628
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2; 1995-25
GSC MAP 1030A
GSC MEM *274; pp. 126-128,131,142

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/27

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 091**

NATIONAL MINERAL INVENTORY:

NAME(S): **POLARIS CU-MO**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 28 06 N
LONGITUDE: 125 44 42 W
ELEVATION: 1150 Metres

NORTHING: 6261583
EASTING: 330902

LOCATION ACCURACY: Within 500M

COMMENTS: Location of chalcopyrite-molybdenite occurrence (Assessment Report 6037, Geology Map).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite

ASSOCIATED: Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Porphyry Epigenetic Hydrothermal

TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Paleozoic-Mesozoic Unnamed/Unknown Group

Unnamed/Unknown Formation

Hogem Intrusive Complex

LITHOLOGY: Porphyritic Quartz Monzonite
Andesite Breccia
Andesite Tuff
Shale
Siliceous Pyritic Argillite
Limestone
Biotite Feldspar Porphyry
Diorite Porphyry
Felsic Tuff

HOSTROCK COMMENTS: The unnamed host unit is called the "problematic unit" (Fieldwork 1992).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1976

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

0.2340

Per cent

Molybdenum

0.0040

Per cent

REFERENCE: Assessment Report 6037.

CAPSULE GEOLOGY

A copper-molybdenum occurrence is located 2 kilometres above the mouth of Polaris Creek, 4 kilometres north of Aiken Lake. The area is 100 kilometres northwest of Germansen Landing.

The property is underlain by a Paleozoic or Mesozoic unit called the "problematic unit" by Ferri et al. (Fieldwork 1992) (formerly assigned to the Lay Range assemblage). Lithologies include andesitic breccias and tuffs, minor acidic tuffs, fetid black limestone and shale. A major northwest-striking fault, the Polaris fault, terminates the mixed volcanic-sedimentary assemblage on the southwest, and a 1-kilometre thick section of grey to black siliceous pyritic argillite occurs southwest of the fault. The layered rocks are cut by small intrusive bodies of porphyritic quartz monzonite, biotite feldspar porphyry and diorite porphyry (Assessment Report 6037) which may be related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

Chalcopyrite and minor molybdenite have been identified in

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fractures in small intrusive bodies of quartz monzonite (Assessment Report 6037). Chalcopyrite has also been found in fractures in pyritized volcanic rocks in the area. A grab sample assayed 0.234 per cent copper and 0.004 per cent molybdenum (Assessment Report 6037, page 7).

BIBLIOGRAPHY

EMPR ASS RPT *6037
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1992/04/14
DATE REVISED: / /

CODED BY: RHM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 092**

NATIONAL MINERAL INVENTORY:

NAME(S): **JACKPINE**, BLACKPINE LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 21 22 N
LONGITUDE: 125 21 52 W
ELEVATION: 1500 Metres

NORTHING: 6248225
EASTING: 353910

LOCATION ACCURACY: Within 5 KM

COMMENTS: Location of the main granodiorite body, northeast of Blackpine Lake (Geological Survey of Canada Memoir 274).

COMMODITIES: Mica Silica Feldspar

MINERALS

SIGNIFICANT: Muscovite Quartz Feldspar

ASSOCIATED: Plagioclase

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Pegmatite Magmatic Industrial Min.
TYPE: O03 Muscovite pegmatite
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Hadrynian
Mesozoic-Cenozoic

GROUP

Ingenika

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Wolverine Complex

LITHOLOGY: Pegmatite
Granodiorite
Migmatite
Gneiss
Schist
Granite

HOSTROCK COMMENTS: The Wolverine complex consists of metamorphosed Ingenika rocks and Cretaceous to Tertiary intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Granulite

CAPSULE GEOLOGY

The Blackpine Lake pegmatite occurrences are located to the northeast of Blackpine Lake, approximately 80 kilometres northeast of Germansen Landing.

The pegmatites are found near the margins of several intrusive bodies which are part of the Wolverine Complex. The Wolverine Complex consists of an assemblage of migmatites, gneisses and schists, with intimately associated granitic rocks and pegmatites of Cretaceous to Tertiary age (Geological Survey of Canada Memoir 274, page 91). The Wolverine rocks are metamorphic equivalents of the Hadrynian Ingenika Group, metamorphism occurring in the Jurassic. The largest granodiorite body is located on the mountain immediately northeast of Blackpine Lake, and outcrops over an area of approximately 13 square kilometres (Geological Survey of Canada Memoir 274, page 98). Several smaller bodies of granodiorite have been mapped for an additional 15 kilometres to the north-northeast.

Small bodies of pegmatite are abundant above and around the granodiorite stocks, and swarms of dikes are also found at intervals along the ridges between the granodiorite stocks and Chase Mountain, 25 kilometres north-northeast of Blackpine Lake. The pegmatites are generally in the form of dykes or sills, usually less than 3 metres thick and 150 metres long. In places the pegmatites form a reticulate network, which may occupy nearly 50 per cent of the rock volume over a 1.25 kilometres square area. The pegmatites are of simple composition, and are composed principally of quartz, microcline microperthite and muscovite and minor sodic plagioclase, biotite, actinolite, garnet, magnetite, sphene, sillimanite and zircon. Muscovite commonly forms euhedral pseudo-hexagonal books as much as 12.5 centimetres in diameter and 7.5 centimetres thick, in

CAPSULE GEOLOGY

some cases forming pockets in the dikes up to 3 metres across, composed of 50 per cent muscovite. Numerous quartz veins are associated with the pegmatites.

In addition to the pegmatites, cream-coloured, coarse-grained, graphic granite occurs in irregular bodies up to 30 metres in diameter in the gneiss-migmatite roof rocks above the granodiorite body, northeast of Blackpine Lake. Feldspar (probably microperthite) in the graphic granite constitutes up to 70 per cent of the bodies (Geological Survey of Canada Memoir 274, page 101), the remainder of the rock being quartz (25 per cent) and twinned sodic plagioclase (5 per cent).

BIBLIOGRAPHY

GSC MEM *274, pp. 91-102
GSC MAP 1030A

Parrish, R.R. (1976): Structure, Metamorphism and Geochronology of the Northern Wolverine Complex Near Chase Mountain, Aiken Lake Map-Area, British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/16

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 093**

NATIONAL MINERAL INVENTORY:

NAME(S): **JIM MAY GARNET**, JIM MAY CREEK

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 00 N
LONGITUDE: 125 04 45 W
ELEVATION: 1500 Metres

NORTHING: 6230285
EASTING: 371008

LOCATION ACCURACY: Within 5 KM

COMMENTS: Centre of Area 1, Map 5 (Open File 1988-26, page 13).

COMMODITIES: Kyanite Garnet

MINERALS

SIGNIFICANT: Garnet Kyanite

ASSOCIATED: Sillimanite

MINERALIZATION AGE: Mesozoic

DEPOSIT

CHARACTER: Layered Stratabound
CLASSIFICATION: Metamorphic Industrial Min.
TYPE: P02 Kyanite-sillimanite schists

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Hadrynian	Ingenika	Swannell	

LITHOLOGY: Pelitic Schist
Pelite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Ancestral North America

METAMORPHIC TYPE: Regional

RELATIONSHIP: Syn-mineralization

GRADE: Amphibolite

CAPSULE GEOLOGY

Sedimentary and metasedimentary strata of Hadrynian age, of the Ingenika and Misinchinka groups, underlie much of the Aiken Lake-Mesilinka River area (Geological Survey of Canada Memoir 274). Ingenika Group strata outcrop west of the Rocky Mountain Trench and include amphibolite facies rocks which were previously assigned to the Tenakihi Group (Geological Survey of Canada Memoir 274) and migmatites of the Wolverine Complex.

Near Jim May Creek in the Tenakihi Range, Ingenika Group rocks of the Swannell Formation (probably pelitic schists) are exposed in an anticlinorium and locally contain abundant garnet and kyanite. Garnets are by far the most common porphyroblasts developed. Approximately 2000 metres of strata occur, in which garnets are reported to comprise as much as 50 per cent of the rock volume (Geological Survey of Canada Memoir 274). The garnets may be up to 2.5 centimetres in size, but are more commonly 1 to 3 millimetres in diameter. A few hundred metres stratigraphically above the garnet-rich strata, pelitic layers locally contain approximately 10 per cent kyanite in crystals which are up to 7.5 centimetres in length (Geological Survey of Canada Memoir 274). Minor amounts of sillimanite are present in the lowest stratigraphic units exposed in the Jim May Creek area.

BIBLIOGRAPHY

GSC MEM *274
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF *1988-26, pp. 12,13; 1992-11

DATE CODED: 1988/03/29
DATE REVISED: 1992/08/19

CODED BY: JP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 094**

NATIONAL MINERAL INVENTORY:

NAME(S): **DESERTERS RANGE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C15E 094C10E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 46 47 N
LONGITUDE: 124 44 11 W
ELEVATION: 800 Metres

NORTHING: 6294211
EASTING: 393902

LOCATION ACCURACY: Within 5 KM

COMMENTS: Centre of Area 3, Map 5 (Open File 1988-26). Elevation ranges from 800 to 1300 metres.

COMMODITIES: Kyanite Garnet

MINERALS

SIGNIFICANT: Garnet Kyanite
MINERALIZATION AGE: Mesozoic

DEPOSIT

CHARACTER: Layered Stratabound
CLASSIFICATION: Metamorphic Industrial Min.
TYPE: P02 Kyanite-sillimanite schists
SHAPE: Tabular
MODIFIER: Folded

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Proterozoic-Cambrian	Misinchinka	Undefined Formation	

LITHOLOGY: Garnet Kyanite Schist
Pelite
Sandstone
Quartzite
Marble
Amphibolite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Muskwa Ranges

RELATIONSHIP: Syn-mineralization GRADE: Amphibolite

CAPSULE GEOLOGY

Pelites, sandstones, quartzites, marbles, and amphibolites comprise the Hadrynian and Lower Cambrian Misinchinka Group, which outcrops in the northern Rocky Mountains. Metamorphosed Misinchinka Group rocks are exposed in the Deserters Range, east of the Rocky Mountain Trench. North of Chowika Creek, pelitic strata in the kyanite zone contain abundant garnets, 5 to 8 millimetres in diameter, and, locally coarse blades of kyanite (Evenchick, 1985).

BIBLIOGRAPHY

EMPR OF *1988-26
GSC P 75-33
GSC MAP 2-1975
*Evenchick, C.A. (1985): Stratigraphy, Metamorphism and their Tectonic Implications in the Sifton and Deserters Ranges, Cassiar and Northern Rocky Mountains, Northern British Columbia; unpublished PhD. thesis, Queens University, Kingston, Ontario, 197p.

DATE CODED: 1988/03/29
DATE REVISED: / /

CODED BY: JP
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **094C 096**

NATIONAL MINERAL INVENTORY:

NAME(S): **WHISTLER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 04 00 N
LONGITUDE: 124 51 54 W
ELEVATION: 1175 Metres

NORTHING: 6215068
EASTING: 383892

LOCATION ACCURACY: Within 500M

COMMENTS: Approximately 1 kilometre from the trail leading up Trail Creek, 32 kilometres northwest of Germansen Landing.

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena

ASSOCIATED: Barite Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Stratabound Disseminated
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Devonian
Devonian-Mississipp.

GROUP

Otter Lakes
Big Creek

FORMATION

Undefined Formation
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dolomite
Shale

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1989

SAMPLE TYPE: Grab

COMMODITY

GRADE

Lead

0.3200

Per cent

Zinc

6.6000

Per cent

COMMENTS: Grab sample.

REFERENCE: Open File 1990-17.

CAPSULE GEOLOGY

The Whistler showing is located 32 kilometres northwest of Germansen Landing. Galena, sphalerite, pyrite, and barite occur in coarsely crystalline dolomite within the Middle Devonian Otter Lakes Group. Mineralization occurs in pods, 0.3 to 1 metre in size, disseminated with 5 to 10 per cent sphalerite and 1.2 per cent galena as replacement of dolomite. Barite forms large, coarsely crystalline clumps within coarse dolomite. This mineralization occurs just below the contact between the Otter Lakes Group dolomite and shale of the Devonian to Mississippian Big Creek Group. One sample taken assayed 0.32 per cent lead and 6.6 per cent zinc (Open File 1990-17).

D.L. Craig reports two showings occurring along a stream cut (Assessment Report 21135). The lower showing is exposed in an outcrop 6 by 4 metres in area and consists of dolomite-hosted granular pyrite. Galena is present as minor pods and disseminations often associated with dolospar veins. The second showing, 400 metres upstream on a cliff face, is a rusty zone, 6 by 2 metres in area. On the other side of the stream from this showing, a boulder train is present containing mineralized dolomite boulders grading from 5.56 to 9.15 per cent lead and zinc.

BIBLIOGRAPHY

EMPR ASS RPT 12135

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 199
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR BULL 91
EMPR EXPL 1989, pp. 193-196
EMPR FIELDWORK *1989, pp. 101-114; 1992, pp. 109-134
EMPR OF 1990-17
GCNL #190(Oct.4), 2000
WWW <http://www.infomine.com/index/properties/YORK-HARDY.html>

DATE CODED: 1989/12/20
DATE REVISED: 1990/06/11

CODED BY: DM
REVISED BY: FF

FIELD CHECK: Y
FIELD CHECK: Y

MINFILE NUMBER: **094C 097**

NATIONAL MINERAL INVENTORY:

NAME(S): **REM**, AMP, END,
NA, SLIDE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

LATITUDE: 56 01 10 N
LONGITUDE: 125 28 32 W
ELEVATION: 1190 Metres

LOCATION ACCURACY: Within 1 KM
COMMENTS: Drill hole collar (Assessment Report 5751).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6211009
EASTING: 345701

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
COMMENTS: Rare bornite.

ASSOCIATED: Pyrite
ALTERATION TYPE: Propylitic Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex
Jurassic			Duckling Creek Syenite Complex

LITHOLOGY: Syenite
Monzonite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Rem occurrence is located on the north bank of Haha Creek, 5 kilometres from its confluence with the Osilinka River and 200 kilometres northwest of Fort St. James.

Disseminated chalcopyrite, pyrite and rarely bornite are hosted in the Early to Middle Jurassic Duckling Creek Syenite Complex, a phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. Mineralization is associated with syenite, monzonite and diorite. Propylitic and potassic alteration is present in the area.

BIBLIOGRAPHY

EMPR ASS RPT 1004, 4737, 5130, 5557, *5751, 5151, 5152
EMPR GEM 1974-281
EMPR EXPL 1975-E151; 1976-E170
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/03/22
DATE REVISED: 1992/08/31

CODED BY: GNG
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 098**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAUL**, MANIE, BLUE SKY

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 04 N
LONGITUDE: 125 50 28 W
ELEVATION: 1840 Metres

NORTHING: 6232095
EASTING: 323755

LOCATION ACCURACY: Within 500M

COMMENTS: Molybdenum-bearing outcrop near ridge crest (Assessment Report 8698).

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite
COMMENTS: Molybdenum is smeared on fault planes and disseminated with
chalcopyrite and pyrite in quartz veins.

ASSOCIATED: Pyrite Quartz

ALTERATION: Epidote

COMMENTS: Epidote veins crosscut the intrusions.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated

CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

DIMENSION:

STRIKE/DIP: 028/90

TREND/PLUNGE:

COMMENTS: Vertical fault planes.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER
Hogem Intrusive Complex

Mesozoic

LITHOLOGY: Syenite
Granite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Paul occurrence is exposed in a cirque and along a ridge top near the headwaters of Osilinka River, 50 kilometres northwest of Germansen Landing.

The area is underlain by syenite to granitic phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. Molybdenite is smeared on rusty pyritic fault planes striking 028 degrees and dipping vertically. Molybdenum with chalcopyrite and pyrite is also hosted in a quartz vein, 1.5 kilometres north of the fault zone. Locally, epidote veinlets crosscut the intrusions.

BIBLIOGRAPHY

EMPR ASS RPT *8698, 9760
EMPR 1980- ; 1981-111
GSG MEM 274
GSC MAP 1030A

DATE CODED: 1991/03/26
DATE REVISED: / /

CODED BY: GNG
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 099**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAT 1**, ROLLY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 14 14 N
LONGITUDE: 125 34 36 W
ELEVATION: 1880 Metres

NORTHING: 6235468
EASTING: 340305

LOCATION ACCURACY: Within 500M

COMMENTS: Location of Main vein area (Assessment Report 21865).

COMMODITIES: Silver Gold Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite Argentite

Magnetite

COMMENTS: Silver sulphantimonides and silver arsenides were also identified.

ASSOCIATED: Quartz Chalcedony

ALTERATION: Hematite

COMMENTS: Hematite occurs within veins.

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal

Epigenetic

DIMENSION: 104 x 1

Metres

STRIKE/DIP: 120/50S

TREND/PLUNGE:

COMMENTS: The main vein is up to 0.61 metre thick.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Mesozoic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Augite Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1982

SAMPLE TYPE: Chip

COMMODITY

GRADE

Silver

400.0000

Grams per tonne

COMMENTS: A 34-centimetre chip sample.

REFERENCE: Assessment Report 14192.

CAPSULE GEOLOGY

The Mat 1 occurrence is located on a ridge east of the east fork of Matetlo Creek, approximately 90 kilometres northwest of Germansen Landing.

Three veins are hosted within augite andesite of the Upper Triassic Plughat Mountain Formation, Takla Group. These volcanics are in contact with the Late Triassic to Early Cretaceous Hogem Intrusive Complex, a few kilometres to the south of the occurrence.

The Main vein, where exposed, is reported to be from 0.15 to 0.61 metre thick within a bleached and schistose zone over 1 metre thick. The vein strikes 120 degrees and dips about 50 degrees to the southwest. It can be traced for 104 metres but several opencuts suggest a strike length of about 230 metres; to the northwest rusty outcropping may indicate a strike length of up to 500 metres. The vein is terminated to the east by a north-striking fault. The vein shows some branching within the zones of altered rock.

The vein consists primarily of quartz and is often chalcedonic. The metallic content of the vein occurs as finely disseminated particles of grey sulphides which total less than 5 per cent of the vein. Argentite, silver sulphantimonides and silver arsenides were identified along with pyrite, chalcopyrite, galena, sphalerite and hematite.

CAPSULE GEOLOGY

A 34-centimetre chip sample across the vein assayed 400 grams per tonne silver (Assessment Report 14192). The average values of ten samples taken in 1991 was 1220 grams per tonne silver, 0.51 per cent copper, 1.79 per cent lead and 2.59 per cent zinc (Assessment Report 21865).

The No. 2 vein branches off the Main vein. The No. 3 vein is 50 metres south and above the other two veins. The grades of these two veins are reported to be 137 grams per tonne silver and less.

An outcrop of magnetite, exposed for 20 metres, lies 50 metres to the north, downhill from the Main vein, exhibiting the same strike but with a 37 degree dip southwest. This vein is from 0.2 to 0.5 metre in thickness and contains quartz, chalcopyrite and pyrite. Samples ranged up to 6.71 per cent copper and 12.8 grams per tonne gold (Assessment Report 21865).

An area (the No. 2 area) 300 metres northwest of the above vein area also hosts 2 veins. An average of 13 samples taken from these veins assayed 446 grams per tonne silver (Assessment Report 14192).

Canasil Resources Inc. plans work on the property in 1998.

BIBLIOGRAPHY

EMPR ASS RPT *14192, *21865
EMPR EXPL 1986-C378
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A
GCNL #41(Feb.27), 1998

DATE CODED: 1991/03/25
DATE REVISED: 1992/06/22

CODED BY: GNG
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 101**

NATIONAL MINERAL INVENTORY:

NAME(S): **ENERGY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 02 57 N
LONGITUDE: 125 12 11 W
ELEVATION: 1105 Metres

NORTHING: 6213740
EASTING: 362787

LOCATION ACCURACY: Within 500M

COMMENTS: Thin lenses of coal exposed in a roadcut (Fieldwork 1991, page 132).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal
MINERALIZATION AGE: Cretaceous-Tertiary

DEPOSIT

CHARACTER: Massive	Podiform	Stratiform	Stratabound
CLASSIFICATION: Fossil Fuel	Sedimentary		
TYPE: A02 Lignite		A03	Sub-bituminous coal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Cretaceous-Tertiary	Sustut	Undefined Formation	

LITHOLOGY: Sandstone
Conglomerate
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane	PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Overlap Assemblage	
METAMORPHIC TYPE: Regional	RELATIONSHIP:
	GRADE: Sub-Bituminous Lignite

CAPSULE GEOLOGY

At the Energy occurrence, thin, discontinuous lenses (less than 1 to 15 centimetres in width) of impure silty/sandy lignite to sub-bituminous coal are hosted in sandstones and conglomerates of the Upper Cretaceous to Tertiary Sustut Group.

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/06/29

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 102**

NATIONAL MINERAL INVENTORY:

NAME(S): **FUEL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 24 N
LONGITUDE: 125 14 24 W
ELEVATION: 940 Metres

NORTHING: 6222067
EASTING: 360755

LOCATION ACCURACY: Within 500M

COMMENTS: Thin lenses of coal in outcrop (Fieldwork 1991, page 132).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal
MINERALIZATION AGE: Cretaceous-Tertiary

DEPOSIT

CHARACTER: Stratiform	Stratabound	Podiform	Massive
CLASSIFICATION: Fossil Fuel			
TYPE: A02 Lignite		A03	Sub-bituminous coal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Cretaceous-Tertiary	Sustut	Undefined Formation	

LITHOLOGY: Sandstone
Conglomerate
Shale
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Fuel occurrence, thin, discontinuous lenses (less than 1 to 15 centimetres in width) of impure silty/sandy lignite to sub-bituminous coal are hosted in sandstones and conglomerates of the Upper Cretaceous to Tertiary Sustut Group.

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/06/29

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 103**

NATIONAL MINERAL INVENTORY:

NAME(S): **CRITTER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 48 N
LONGITUDE: 125 00 45 W
ELEVATION: 990 Metres

NORTHING: 6222373
EASTING: 374916

LOCATION ACCURACY: Within 500M

COMMENTS: Blebby mineralization in several outcrops (Fieldwork 1991, pages 127-145).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
ASSOCIATED: Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated
CLASSIFICATION: Replacement Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Otter Lakes	Undefined Formation	

LITHOLOGY: Dolomite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Critter occurrence, disseminated sphalerite with possible barite occurs in recrystallized sections of light to dark grey dolomite of the Middle Devonian Otter Lakes Group.

BIBLIOGRAPHY

EMPR ASS RPT 7611, 21211, 21809
EMPR OF 1990-17; 1992-11
EMPR FIELDWORK 1990, pp. 101-114; *1991, pp. 127-145
GSC MEM 274, p. 228
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/06/09

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 104**

NATIONAL MINERAL INVENTORY:

NAME(S): **QUARRY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 08 11 N
LONGITUDE: 125 06 14 W
ELEVATION: 870 Metres

NORTHING: 6223253
EASTING: 369259

LOCATION ACCURACY: Within 500M

COMMENTS: Exposed in a limestone rock quarry just off a road (Fieldwork 1991, page 132, Map Number 10).

COMMODITIES: Lead Zinc Copper Gold Antimony

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Boulangerite Stibnite

COMMENTS: Stibnite was only tentatively identified.

ASSOCIATED: Quartz

ALTERATION: Malachite Azurite Cerussite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Upper Proterozoic

GROUP

Ingenika

FORMATION

Espee

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dolomitic Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY

GRADE

Gold	0.8900	Grams per tonne
Copper	3.8000	Per cent
Lead	42.5000	Per cent
Antimony	20.0000	Per cent
Zinc	0.3400	Per cent

COMMENTS: Massive sulphides in vein.

REFERENCE: Open File 1992-11, Map Number 10.

CAPSULE GEOLOGY

At the Quarry occurrence, recrystallized and dolomitized limestones of the Upper Proterozoic Ingenika Group, Espee Formation host mineralized quartz veins. Minerals identified include sphalerite, galena, cerussite, chalcopyrite, boulangerite, malachite, azurite and possibly stibnite. One sample taken assayed 0.89 gram per tonne gold, 3.8 per cent copper, 0.34 per cent zinc, 42.5 per cent lead, 0.65 grams per tonne silver and 20 per cent antimony (Open File 1992-11, Map Number 10).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145

EMPR OF *1992-11

GSC MEM 274

GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/06/29

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 105**

NATIONAL MINERAL INVENTORY:

NAME(S): **GAEL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 10 29 N
LONGITUDE: 125 03 54 W
ELEVATION: 1880 Metres

NORTHING: 6227445
EASTING: 371803

LOCATION ACCURACY: Within 500M

COMMENTS: Located in a trench at the end of a road just below Beveley Peak
(Assessment Reports 5006, 7546).

COMMODITIES: Silver Lead Copper Gold

MINERALS

SIGNIFICANT: Arsenopyrite Argentite Pyrite Galena Chalcopyrite

Scorodite

ALTERATION: Silica

ALTERATION TYPE: Silicific'n

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Breccia Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 274 Metres STRIKE/DIP: 060/67S TREND/PLUNGE:

COMMENTS: Shear zone length.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic Ingenika Swannell

LITHOLOGY: Quartzite
Sericite Schist
Siliceous Schist

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1979
SAMPLE TYPE: Drill Core
COMMODITY: Silver GRADE
377.0000 Grams per tonne
COMMENTS: From a 0.6-metre drill section.
REFERENCE: Assessment Report 7546.

CAPSULE GEOLOGY

At the Gael occurrence, mineralization occurs within a shear on a cliff face in grey quartzites of the Upper Proterozoic Swannell Formation, Ingenika Group. The shear has a well-developed hangingwall and an average strike of 060 degrees. The hangingwall dips 65 to 70 degrees to the southeast. The footwall was not observed - the quartzite grading into siliceous schist and finally into sericite schist. The mineralized shear is thought to have a width of between 1.5 and 3 metres; the zone has also been reported as a breccia (S. Dudka, personal communication, 1992). Silver mineralized samples were collected from along the structure for 274 metres.

Disseminated fine-grained sulphides, accompanied by a high level of silicification, are variably reported to include arsenopyrite, argentite, pyrite, galena and chalcopyrite and scorodite.

The highest assay from drill core was 377 grams per tonne silver over 0.66 metre; the highest gold was 0.1 gram per tonne (Assessment Report 7546). One selected sample assayed 2095 grams per tonne silver and 0.44 gram per tonne gold (Assessment Report 7546).

BIBLIOGRAPHY

EMPR ASS RPT *5008, *7546, 8734
EMPR FIELDWORK *1991, pp. 127-145

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 210
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A
Chevron File

DATE CODED: 1991/11/27
DATE REVISED: 1992/06/29

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 106**

NATIONAL MINERAL INVENTORY:

NAME(S): **RANGE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 09 30 N
LONGITUDE: 125 12 11 W
ELEVATION: 1735 Metres

NORTHING: 6225887
EASTING: 363175

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop located 300 to 400 metres down from ridgecrest (approximately 100 metres vertical down) (Fieldwork 1991, page 132, Map Number 17).

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite Malachite
ALTERATION: Silica Epidote Chlorite Malachite
ALTERATION TYPE: Silicific'n Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic Lay Range Assemblage

LITHOLOGY: Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Gold 1.3000 Grams per tonne
Copper 0.7200 Per cent
REFERENCE: Fieldwork 1991, page 132, Map Number 17.

CAPSULE GEOLOGY

At the Range occurrence, massive basalt of the Mississippian to Permian Lay Range assemblage is sheared, locally altered to epidote and chlorite, and silicified. Malachite staining and about 1 per cent pyrite occur in the rocks. The style of mineralization is reported as a shear-controlled vein. A sample assayed 1.3 grams per tonne gold and 0.72 per cent copper (Open File 1992-11, Sheet 2, Map Number 17).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/06/30

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 107**

NATIONAL MINERAL INVENTORY:

NAME(S): **SURPRISE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 08 16 N
LONGITUDE: 125 14 28 W
ELEVATION: 1775 Metres

NORTHING: 6223676
EASTING: 360738

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop on a ridge crest; discovered during the 1991 regional mapping program of the B.C. Geological Survey Branch (Fieldwork 1991, page 132).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Malachite
ASSOCIATED: Quartz Ankerite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Paleozoic			Lay Range Assemblage

LITHOLOGY: Volcanic Sediment/Sedimentary Rock
Sandstone
Siltstone
Cherty Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1992
SAMPLE TYPE: Grab	
COMMODITY	<u>GRADE</u>
Copper	0.7500 Per cent
REFERENCE: Open File 1992-11, Map Number 18.	

CAPSULE GEOLOGY

At the Surprise occurrence, volcanic sediments, sandstones, siltstones and cherty argillites of the Mississippian to Permian Lay Range assemblage are strongly brecciated and cut by a quartz-ankerite vein, 10 to 15 centimetres wide, containing pyrite and stained with malachite. The vein strikes 230 degrees and dips 13 degrees northwest. A sample taken at this showing assayed 0.75 per cent copper (Open File 1992-11, Sheet 2, Map Number 18).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/06/30

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 108**

NATIONAL MINERAL INVENTORY:

NAME(S): **MJW**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 08 06 N
LONGITUDE: 125 25 15 W
ELEVATION: 1750 Metres

NORTHING: 6223744
EASTING: 349562

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop discovered in 1991 by the British Columbia Geological Survey Branch (Fieldwork 1991, page 133, Map Number 26).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite Azurite Specularite Pyrite Chalcopyrite

COMMENTS: Chalcopyrite tentatively identified.

ALTERATION: Silica Chlorite Malachite Azurite Specularite

ALTERATION TYPE: Silicific'n Chloritic Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated

CLASSIFICATION: Porphyry

TYPE: L03 Alkalic porphyry Cu-Au

DIMENSION: 10 x 7 Metres

COMMENTS: Area of the mineralized zone.

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE

Upper Triassic
Mesozoic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Hornfelsed Augite Porphyry
Monzonite
Monzodiorite

HOSTROCK COMMENTS: The hostrock is possibly an intensely hornfelsed raft or roof pendant of the Takla Group.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

METAMORPHIC TYPE: Contact

Plutonic Rocks

RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

2.1000

Per cent

REFERENCE: Open File 1992-11, Sheet 2, Map Number 26.

CAPSULE GEOLOGY

The MJW area is underlain by monzonite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. Malachite and azurite staining with specularite, pyrite and possibly chalcopyrite occur in strongly fractured and locally silicified dark green chloritized and hornfelsed augite porphyry which is possibly a xenolithic raft of the Upper Triassic Plughat Mountain Formation, Takla Group. The mineralized zone is reported to be 10 by 7 metres in area. A sample taken assayed 2.10 per cent copper (Open File 1992-11, Sheet 2, Map Number 26).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145

EMPR OF *1992-11

GSC MEM 274

GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 108**

MINFILE NUMBER: **094C 109**

NATIONAL MINERAL INVENTORY:

NAME(S): **CLAW**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 05 49 N
LONGITUDE: 125 25 44 W
ELEVATION: 1800 Metres

NORTHING: 6219528
EASTING: 348912

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized rubble and subcrop on a ridge crest; discovered during the 1991 regional mapping program of the B.C. Geological Survey (Fieldwork 1991, page 133, Map Number 27).

COMMODITIES: Copper Iron

MINERALS

SIGNIFICANT: Malachite Specularite Magnetite
ASSOCIATED: Specularite
ALTERATION: Malachite Ankerite
ALTERATION TYPE: Oxidation Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkaline porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Copper 0.1130 Per cent
COMMENTS: Gold assayed 0.115 gram per tonne.
REFERENCE: Open File 1992-11, Map sheet 2, Map Number 27.

CAPSULE GEOLOGY

At the Claw occurrence, malachite staining occurs with massive crystalline specularite and magnetite in a vein 15 centimetres wide found in rubble and subcrop on a ridge top. The ridge is underlain by monzonite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. A sample taken at this location assayed 0.115 gram per tonne gold and 0.113 per cent copper (Open File 1992-11, Map Number 27). The rock is reported to be ankerite altered.

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 216
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/06/22

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 111**

NATIONAL MINERAL INVENTORY:

NAME(S): **SNOW**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 21 N
LONGITUDE: 125 30 23 W
ELEVATION: 1955 Metres

NORTHING: 6231815
EASTING: 344533

LOCATION ACCURACY: Within 500M

COMMENTS: The coordinates are for the mineralized outcrop which was located during the 1991 regional mapping program of the B.C. Geological Survey (Fieldwork 1991, page 127-145).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Epidote Calcite
ALTERATION: Malachite Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Argillite
Tuffaceous Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP: Pre-mineralization
GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N
CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY: Copper
GRADE: 0.8800
Per cent
REFERENCE: Open File 1992-11, Sheet 2, Map Number 32.

CAPSULE GEOLOGY

At the Snow occurrence, fractured argillite and tuffaceous siltstone of the Takla Group, Upper Triassic Plughat Formation, hosts an epidote-calcite vein up to 15 centimetres in width. The vein contains from 1 to 3 per cent disseminated chalcopyrite and is stained with malachite and azurite. Malachite and azurite staining also occurs on the wallrocks. A sample taken at this showing assayed 0.88 per cent copper (Open File 1992-11, Map Number 32, Sheet 2).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, p. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 113**

NATIONAL MINERAL INVENTORY:

NAME(S): **YAK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 35 N
LONGITUDE: 125 36 00 W
ELEVATION: 2040 Metres

NORTHING: 6232463
EASTING: 338744

LOCATION ACCURACY: Within 500M

COMMENTS: On the west side of a ridge crest in an ankerite-altered zone (Open File 1992-11, Sheet 2, Map Number 34). Several locations were discovered during the 1991 regional mapping program of the B.C. Geological Survey.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Ankerite
ALTERATION: Malachite Azurite Ankerite
ALTERATION TYPE: Oxidation Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 70 x 5 Metres STRIKE/DIP: 130/ TREND/PLUNGE:
COMMENTS: Zone of ankerite veins.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Mesozoic Hogem Intrusive Complex

LITHOLOGY: Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Quesnel

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Copper 1.5200 Per cent
REFERENCE: Open File 1992-11, Sheet 2, Map Number 34.

CAPSULE GEOLOGY

At the Yak occurrence, fine and coarse-grained monzonite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex is cut by numerous small ankerite veins in a zone 5 to 6 metres in width. Chalcopyrite, malachite and azurite are disseminated throughout the zone and coat fracture surfaces. Local mafic segregations in the monzonite are more strongly mineralized than the felsic sections. The zone strikes approximately 130 degrees and can be traced for 50 to 70 metres to the east and apparently to the northwest across a small cirque into the Koala occurrence (094C 114). A sample of ankerite-altered monzonite assayed 1.52 per cent copper (Open File 1992-11, Map Number 34, Sheet 2).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 114**

NATIONAL MINERAL INVENTORY:

NAME(S): **KOALA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 42 N
LONGITUDE: 125 36 20 W
ELEVATION: 1980 Metres

NORTHING: 6232692
EASTING: 338408

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrops on a ridge crest, discovered by the 1991 field mapping crew of the B.C. Geological Survey (Fieldwork 1991, pages 127-145, Table 1-11-1, Map Number 35).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Ankerite
ALTERATION: Malachite Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 75 x 5 Metres
COMMENTS: Zone of ankerite veins.

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Mesozoic

Hogem Intrusive Complex

LITHOLOGY: Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Koala occurrence, fine and coarse-grained monzonite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex is cut by numerous small ankerite veins in an zone 5 to 6 metres in width (and up to 75 metres long). From 1 to 2 per cent chalcopyrite, malachite and azurite are disseminated throughout and coat fracture surfaces. Local mafic segregations in the monzonite are more strongly mineralized than the felsic sections. The zone may extend southeast to the Yak occurrence (094C 113). A sample taken assayed 0.016 per cent copper (Open File 1992-11, Map sheet 2, Map Number 35).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 115**

NATIONAL MINERAL INVENTORY:

NAME(S): **INTREPID**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 36 N
LONGITUDE: 125 39 10 W
ELEVATION: 2100 Metres

NORTHING: 6232619
EASTING: 335473

LOCATION ACCURACY: Within 500M

COMMENTS: Several mineralized outcrops discovered during the 1991 regional mapping program of the B.C. Geological Survey (Fieldwork 1991, pages 127-145).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Ankerite Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Mesozoic	Takla	Plughat Mountain	Hogem Intrusive Complex

LITHOLOGY: Monzonite
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Omineca Mountains
Quesnel
RELATIONSHIP: Syn-mineralization
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N
CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1991
COMMODITY
Copper 0.2250 Per cent
REFERENCE: Open File 1992-11, Map Sheet 2, Map Number 37.

CAPSULE GEOLOGY

At the Intrepid occurrence, chalcopyrite and malachite occur as disseminations and fracture-fillings in ankerite and quartz veins. The veins occur in several locations within aplitic monzonite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex near the contact with volcanic rocks of the Upper Triassic Plughat Mountain Formation, Takla Group. A sample taken assayed 0.225 per cent copper (Open File 1992-11, Map Sheet 2, Map Number 37).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

RUN DATE: 26-Jun-2003
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MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 222
REPORT: RGEN0100

MINFILE NUMBER: **094C 116**

NATIONAL MINERAL INVENTORY:

NAME(S): **BILL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 12 59 N
LONGITUDE: 125 39 28 W
ELEVATION: 2195 Metres

NORTHING: 6233341
EASTING: 335190

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized zone in an outcrop discovered during the 1991 regional mapping program of the B.C. Geological Survey (Fieldwork 1991, page 133).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Pyrite	Chalcopyrite	Malachite	Azurite
ALTERATION:	Epidote	Malachite	Azurite	
ALTERATION TYPE:	Epidote		Oxidation	
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 10 x 10 Metres
COMMENTS: Area of epidote alteration.

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact Regional

Quesnel
RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Zeolite
Hornfels

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY

Copper
GRADE: 1.4700 Per cent

REFERENCE: Open File 1992-11, Sheet 2, Map Number 38.

CAPSULE GEOLOGY

At the Bill occurrence, a zone of epidotization occurs in monzonite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. This zone contains epidote veins carrying pyrite, chalcopyrite, malachite and azurite in two zones up to 10 metres across. A sample taken of altered monzonite assayed 1.47 per cent copper (Open File 1992-11, Sheet 2, Map Number 38).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1991-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 116**

MINFILE NUMBER: **094C 117**

NATIONAL MINERAL INVENTORY:

NAME(S): **YETI**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 14 00 N
LONGITUDE: 125 39 28 W
ELEVATION: 1935 Metres

NORTHING: 6235227
EASTING: 335263

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop discovered during the 1991 regional mapping program of the B.C. Geological Survey (Fieldwork 1991, pages 127-145).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
DIMENSION: 1 x 1 Metres
COMMENTS: A small isolated occurrence.

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP
Upper Triassic Takla
Mesozoic

FORMATION
Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER
Hogem Intrusive Complex

LITHOLOGY: Augite Porphyry Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: Pre-mineralization

GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

0.0980

Per cent

REFERENCE: Open File 1992-11, Sheet 2, Map Number 39.

CAPSULE GEOLOGY

At the Yeti occurrence, a small isolated showing (1 by 1 metre) consisting of pyrite, chalcopyrite and malachite occurs in an augite porphyry flow of the Upper Triassic Plughat Mountain Formation, Takla Group. The mineralization occurs within a few kilometres to the north of the contact with the Late Triassic to Early Cretaceous Hogem Intrusive Complex. A sample taken at this location assayed 0.098 per cent copper (Open File 1992-11, Sheet 2, Map Number 39).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A
GCNL #59(Mar.25), 1997

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 118**

NATIONAL MINERAL INVENTORY:

NAME(S): **DRAGON**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 13 07 N
LONGITUDE: 125 35 39 W
ELEVATION: 2140 Metres

NORTHING: 6233438
EASTING: 339143

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop near a ridge crest, discovered during the 1991 regional mapping program of the B.C. Geological Survey (Fieldwork 1991, pages 127-145).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Malachite
ASSOCIATED: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 5 x 2 Metres
COMMENTS: The dike dips steeply.

STRIKE/DIP: 360/

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic Mesozoic	Takla	Plughat Mountain	Hogem Intrusive Complex

LITHOLOGY: Aplitic Granite Dike
Augite Phyric Agglomerate
Basalt
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

<u>COMMODITY</u>	<u>GRADE</u>	
Copper	0.0820	Per cent

REFERENCE: Open File 1992-11, Map Sheet 2, Map Number 40.

CAPSULE GEOLOGY

At the Dragon occurrence, a 2-metre wide dike consisting of aplitic granite cuts volcanic rocks of the Late Jurassic to Early Jurassic Takla Group. Minor malachite staining on some fracture surfaces, minor amounts of epidote and up to 5 per cent pyrite blebs occur in the dike. A sample of pyritized aplitic granite from this location assayed 0.082 per cent copper and 0.12 gram per tonne gold (Open File 1992-11, Map Sheet 2, Map Number 40).

Takla Group volcanics in the area consist of augite phyric agglomerates, basalts and tuffs of the Upper Triassic Plughat Mountain Formation. The occurrence is close to the contact with the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 119**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOUGH**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 14 40 N
LONGITUDE: 125 31 06 W
ELEVATION: 1770 Metres

NORTHING: 6236138
EASTING: 343949

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop discovered during the 1991 regional mapping program of the B.C. Geological Survey (Fieldwork 1991, pages 127-145).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Limonite
COMMENTS: Limonite is assumed.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Lithic Tuff
Tuffaceous Siltstone
Argillite
Agglomerate
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY

Copper

GRADE

0.0800

Per cent

REFERENCE: Open File 1992-11, Map Sheet 2, Map Number 42.

CAPSULE GEOLOGY

At the Tough occurrence, chalcopyrite occurs in gossanous lithic tuff of the Upper Triassic Plughat Mountain Formation, Takla Group. In this area, the formation consists mainly of tuffs, tuffaceous siltstone, argillite, agglomerate and minor limestone. A sample taken at this location assayed 0.08 per cent copper (Open File 1992-11, Map Sheet 2, Map Number 42).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF *1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/06

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 120**

NATIONAL MINERAL INVENTORY:

NAME(S): **CR**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 15 15 N
LONGITUDE: 125 24 03 W
ELEVATION: 1145 Metres

NORTHING: 6236960
EASTING: 351266

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop on the side of a logging road, discovered during the 1991 regional mapping program of the B.C. Geological Survey (Fieldwork 1991, page 133, Map Number 44).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Epidote Malachite
ALTERATION TYPE: Epidote Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Takla	Undefined Formation	

LITHOLOGY: Plagioclase Phyric Amygdaloidal Basalt

HOSTROCK COMMENTS: Lower Jurassic fossils are reported from the Takla strata.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Zeolite

CAPSULE GEOLOGY

At the CR occurrence, epidote alteration and malachite staining are found in massive, plagioclase phyric, maroon, amygdaloidal basalt flows of an unnamed Lower Jurassic unit of the Takla Group.

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/15

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 121**

NATIONAL MINERAL INVENTORY:

NAME(S): **NUTHATCH**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 15 33 N
LONGITUDE: 125 25 15 W
ELEVATION: 1140 Metres

NORTHING: 6237560
EASTING: 350047

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop on the southwest side of a logging road in drainage ditches, near a creek (Fieldwork 1991, page 133, Map Number 45). Discovered during the 1991 regional mapping program of the B.C. Geological Survey.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite Azurite
ASSOCIATED: Carbonate
ALTERATION: Epidote Malachite Azurite
ALTERATION TYPE: Epidote Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 15 Metres

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Triassic

GROUP

Takla

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Plagioclase Phyric Amygdaloidal Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

0.1300

Per cent

REFERENCE: Open File 1992-11, Sheet 2, Map Number 45.

CAPSULE GEOLOGY

At the Nuthatch occurrence, epidote alteration and malachite and azurite staining are found in massive, plagioclase phyric, maroon, amygdaloidal basalt flows of an unnamed Lower Jurassic unit of the Takla Group. The flows are locally sheared and fractured and some carbonate veining is present. The mineralized zone is at least 15 metres across. A sample taken at this location assayed 0.13 per cent copper (Open File 1992-11, Sheet 2, Map Number 45).

BIBLIOGRAPHY

EMPR FIELDWORK *1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1991/11/27
DATE REVISED: 1992/07/15

CODED BY: SFD
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 122**

NATIONAL MINERAL INVENTORY:

NAME(S): **LCF**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 32 53 N
LONGITUDE: 125 57 03 W
ELEVATION: 1275 Metres

NORTHING: 6270978
EASTING: 318607

LOCATION ACCURACY: Within 500M

COMMENTS: Located on the east side of the Omineca development road, 4 kilometres from Germansen Landing (Assessment Report 11864, Figures 2 and 3).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Sulphide
ASSOCIATED: Quartz
ALTERATION: Carbonate Quartz
COMMENTS: Reported as quartz-carbonate alteration of greenstone and it may, therefore, have been the authors intention to indicate listwanite.

ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Greenstone
Quartz Carbonate Rock

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1983

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	4.4000	Grams per tonne
Gold	6.6800	Grams per tonne

REFERENCE: Assessment Report 11864.

CAPSULE GEOLOGY

The LCF showing is located on the east side of the Omineca development road, 4 kilometres northwest of the upper Lay Creek bridge, 117 kilometres northwest of Germansen Landing.

Hostrocks are altered greenstones recently reassigned to the Upper Triassic Plughat Mountain Formation (informally named) of the Takla Group (formerly assigned to Lay Range assemblage) (Open File 1993-2). These greenstones have been pervasively altered to quartz carbonate rock along a 50 to 70-metre wide zone along the Lay Creek fault (Assessment Report 11864), a major structure at least 30 kilometres in length. Eight trench samples of buff to brown, rusty-weathering quartz carbonate rock carrying minor sulphides yielded low geochemical results. Geochemical analysis of a grab sample of rusty-weathering, fine-grained, equigranular, massive quartz-carbonate-rock scraped from the roadbed yielded 6.68 grams per tonne gold and 4.4 grams per tonne silver (Assessment Report 11864).

BIBLIOGRAPHY

EMPR ASS RPT *11864
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 229
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 1030A

DATE CODED: 1992/02/27
DATE REVISED: / /

CODED BY: RHM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 123**

NATIONAL MINERAL INVENTORY:

NAME(S): **LINK, STAKE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 02 57 N
LONGITUDE: 125 25 34 W
ELEVATION: 1700 Metres

NORTHING: 6214206
EASTING: 348898

LOCATION ACCURACY: Within 500M

COMMENTS: The Stake showing occurs 340 metres east-southeast of the initial post of the Link 13 and 14 claims (Assessment Report 21449).

COMMODITIES: Copper Iron

MINERALS

SIGNIFICANT: Chalcopyrite Magnetite Pyrite
ASSOCIATED: Epidote Hematite
ALTERATION: K-Feldspar
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal Industrial Min.
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Mesocratic Syenite
Melanocratic Syenite
Diorite
Gabbro
Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Quesnel
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY: Copper GRADE: 0.1500 Per cent
COMMENTS: Up to 11 per cent magnetite is reported.
REFERENCE: Assessment Report 21449.

CAPSULE GEOLOGY

The Link occurrence is underlain by the Late Triassic to Early Cretaceous Hogem Intrusive Complex which consists of numerous intrusive bodies of distinct age. This complex varies in composition between gabbro, diorite, monzonite, syenite and alkali feldspar syenite.

Disseminated chalcopyrite, magnetite and pyrite are reported to occur over the entire length of the property. Increased concentrations occur with potassically altered syenite or where the syenite is more melanocratic. Chalcopyrite has also been noted in fracture fillings associated with epidote and hematite.

The Stake showing occurs near the eastern end of the Link claims where mesocratic syenite forms a northwest-trending ridge crosscut by a band of more mafic syenite, 4 to 5 metres in width. This band is enriched with up to 11 per cent magnetite and 0.15 per cent copper (Assessment Report 21449).

BIBLIOGRAPHY

EMPR ASS RPT *21449
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

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REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 1030A

DATE CODED: 1992/06/18
DATE REVISED: 1992/07/16

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 125**

NATIONAL MINERAL INVENTORY:

NAME(S): **CARIBOU**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C10E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 30 34 N
LONGITUDE: 124 39 21 W
ELEVATION: 1750 Metres

NORTHING: 6264010
EASTING: 398097

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from map showing claims (Minister of Mines Annual Report 1926, page A154).

COMMODITIES: Mica

MINERALS

SIGNIFICANT: Muscovite Quartz Feldspar
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Pegmatite Magmatic Industrial Min.
TYPE: O03 Muscovite pegmatite

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Hadrynian	Ingenika	Undefined Formation	

LITHOLOGY: Pegmatite
Mica Schist
Gneiss
Quartzite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Kyanite zone (Geological Survey of Canada Paper 75-33, Map 2-1975). GRADE: Amphibolite

CAPSULE GEOLOGY

The Caribou mica occurrence is located on the east side of Mount Henri, 82 kilometres north of Germansen Landing.

Hostrocks are pegmatites within mica schists, gneisses and quartzites of the Hadrynian Ingenika Group which have been regionally metamorphosed to the kyanite zone of the amphibolite facies.

The occurrence is described (Geological Survey of Canada Summary Report, Part A, page 33A) as consisting of "small veins" composed largely of quartz and muscovite, but no "marketable" mica was observed in place on the property.

Refer to the Family Farm occurrence (094C 034) for further details of these regionally occurring mica-bearing pegmatites.

BIBLIOGRAPHY

EMPR AR *1926-1531; 1927-C161
GSC P 75-33, p. 17
GSC MAP 2-1975
GSC SUM RPT *1927, Part A, pp. 31A-35A
GSC EC GEOL No. 19, pp. 83,90
EMR MP CORPFILE (General Holding Company Limited)
CANMET RPT No. 701, pp. 78-80

DATE CODED: 1992/03/10
DATE REVISED: 1992/03/10

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUNSET**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C07E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 29 25 N
LONGITUDE: 124 40 57 W
ELEVATION: 1800 Metres

NORTHING: 6261917
EASTING: 396404

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from map showing claims (Minister of Mines Annual Report 1926, page A154).

COMMODITIES: Mica

MINERALS

SIGNIFICANT: Muscovite Quartz Feldspar
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Pegmatite Industrial Min.
TYPE: O03 Muscovite pegmatite

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE

Hadrynian

GROUP

Ingenika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Pegmatite
Mica Schist
Gneiss
Quartzite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
COMMENTS: Kyanite zone (Geological Survey of Canada Paper 75-33, Map 2-1975)

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Amphibolite

CAPSULE GEOLOGY

The Sunset mica occurrence is located on the southeast side of Mount Henri, 80 kilometres north of Germansen Landing.

Hostrocks are pegmatites within mica schists, gneisses and quartzites of the Hadrynian Ingenika Group which have been regionally metamorphosed to the kyanite zone of the amphibolite facies. The occurrence is described (Geological Survey of Canada Summary Report 1927, Part A, page 33A) as consisting of "small veins" composed largely of quartz and muscovite, but no "marketable" mica was observed in place on the property.

Refer to the Family Farm occurrence (094C 034) for further details of these regionally occurring mica-bearing pegmatite occurrences.

BIBLIOGRAPHY

EMPR AR *1926-153, 1927-C161
GSC P 75-33, p. 17
GSC MAP 2-1975
GSC SUM RPT *1927, Part A, pp. 31A-35A
GSC EC GEOL No. 19, pp. 83,90
EMR MP CORPFILE "General Holding Company Limited"
CANMET RPT No. 701, pp. 78-80

DATE CODED: 1992/03/10
DATE REVISED: 1992/03/10

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 127**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAVEN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C12W 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 30 09 N
LONGITUDE: 125 56 45 W
ELEVATION: 1840 Metres

NORTHING: 6265897
EASTING: 318697

LOCATION ACCURACY: Within 500M

COMMENTS: Location of copper geochemical anomaly (Assessment Report 21521).

COMMODITIES: Copper Lead Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Magnetite Pyrrhotite Pyrite Galena

 Sphalerite Epidote Pyrite

ALTERATION: Chlorite Pyrite

ALTERATION TYPE: Propylitic Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Podiform
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Triassic
Mesozoic

Takla

Plughat Mountain

Hogem Intrusive Complex

LITHOLOGY: Andesite
 Tuff
 Monzonite Porphyry Dike
 Diorite
 Andesite Breccia
 Basalt
 Agglomerate
 Shale
 Conglomerate
 Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Raven prospect is located near the headwaters of Raven Creek, approximately 110 kilometres northwest of Germansen Landing. The area is underlain by the Upper Triassic Takla Group (Plughat Mountain Formation) which is intruded by dikes of monzonite porphyry, and a plug of diorite, possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The Takla Group consists of andesite flows and breccias, basalt, tuff, agglomerate, shale, conglomerate and limestone (Geological Survey of Canada Memoir 274). Prominent and widespread copper and gold geochemical anomalies have been defined in the area (Assessment Reports 31987, 21521) and chalcopyrite has been found disseminated in monzonite porphyry dikes, as well as with magnetite, pyrrhotite and pyrite as fracture-controlled blebs and pods in tuff. Minor galena and sphalerite mineralization is also present.

BIBLIOGRAPHY

EMPR ASS RPT 3197, *21521
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/03/25
DATE REVISED: 1992/08/24

CODED BY: RHM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 128**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOUTH SARAH**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 28 29 N
LONGITUDE: 125 56 14 W
ELEVATION: 1950 Metres

NORTHING: 6262784
EASTING: 319095

LOCATION ACCURACY: Within 500M

COMMENTS: Location of anomalous mercury sample, (16,000 parts per billion)
(Assessment Report 21521, Figure 2).

COMMODITIES: Copper Gold Silver Mercury

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Carbonate Quartz
ALTERATION: Chlorite Epidote
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic Mesozoic	Takla	Plughat Mountain	Hogem Intrusive Complex

LITHOLOGY: Andesitic Flow
Andesitic Breccia
Basalt
Tuff
Agglomerate
Shale
Conglomerate
Limestone
Intermediate Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1990
SAMPLE TYPE: Grab	
<u>COMMODITY</u>	<u>GRADE</u>
Silver	78.4000 Grams per tonne
Gold	13.5000 Grams per tonne
Copper	6.0600 Per cent

COMMENTS: Chalcopyrite in a quartz stringer.
REFERENCE: Assessment Report 21521, volume 1, page 47.

CAPSULE GEOLOGY

The South Sarah occurrence is located near the west end of South Sarah cirque, approximately 108 kilometres northwest of Germansen Landing.

The area is underlain mainly by volcanic rocks of the Upper Triassic Takla Group (Plughat Mountain Formation) which consists of andesitic flows and breccias, basalt, tuff, agglomerate, shale, conglomerate and limestone (Geological Survey of Canada Memoir 274). Dikes of intermediate composition possibly related to the Late Triassic to Cretaceous Hogem Intrusive Complex are common in the area.

The volcanic rocks are propylitically altered and minor showings of chalcopyrite are common. Grab samples from quartz and carbonate veins analysed 6.06 per cent copper, 78.4 grams per tonne silver, 1.6 grams per tonne mercury and 13.5 grams per tonne gold (Assessment

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REPORT: RGEN0100

CAPSULE GEOLOGY

Report 21521, page 47).

BIBLIOGRAPHY

EMPR ASS RPT *21521
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/03/25
DATE REVISED: / /

CODED BY: RHM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 129**

NATIONAL MINERAL INVENTORY:

NAME(S): **OSPREY**, WASI ROAD

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 08 35 N
LONGITUDE: 124 54 06 W
ELEVATION: 850 Metres

NORTHING: 6223630
EASTING: 381844

LOCATION ACCURACY: Within 500M

COMMENTS: Location of the Wasi Road showing, situated near the Osilinka River (Assessment Report 20576).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite
ASSOCIATED: Calcite Dolomite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Disseminated Shear
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	

LITHOLOGY: Dolomite
Dolomitic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1991
SAMPLE TYPE:	Chip		
COMMODITY		GRADE	
Lead		0.3400	Per cent
Zinc		15.8000	Per cent

COMMENTS: From a 2-metre chip sample (Sample R270).
REFERENCE: Assessment Report 21914, Plate 2.

CAPSULE GEOLOGY

The Osprey-Wasi Road showing, located near the base of the southern slope of the Osilinka River valley, is marked by a gossanous outcrop about 80 metres in length.

A Cambrian to Middle Devonian package consisting of the Razorback (Kechika and Road River group equivalents), Echo Lake (Sandpile Group equivalent) and Otter Lakes (McDame Group equivalent) groups comprise a regional northwest plunging anticline which is offset by faults and local drag folds. Sandy and argillaceous dolomite, massive limestone and minor calcareous slate comprise this Paleozoic sequence.

Mineralization, consisting of zinc-rich dolospar and calcite, has replaced dolomite and dolomitic breccia of the Middle Ordovician to Lower Devonian Echo Lake Group. Chaotic collapse breccia hosts pervasive sphalerite throughout, with higher grade sections found in apparent shear zones or areas where the original porosity was greater. Two-metre chip samples taken across the showing assayed as high as 15.8 per cent zinc and 0.34 per cent lead (Assessment Report 21914).

BIBLIOGRAPHY

EMPR ASS RPT 19440, 20456, 20576, *21914
EMPR FIELDWORK 1989, pp. 101-114; 1992, pp. 109-134
EMPR OF 1990-17; 1993-2
EMPR BULL 91
GSC MEM 274, p. 201

RUN DATE: 26-Jun-2003
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PAGE: 239
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 2-1975
GSC P 75-33

DATE CODED: 1992/06/04
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 130**

NATIONAL MINERAL INVENTORY: 094C3 Zn1

NAME(S): **CARIE**, WASI CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 06 33 N
LONGITUDE: 125 02 29 W
ELEVATION: 975 Metres

NORTHING: 6220107
EASTING: 373052

LOCATION ACCURACY: Within 500M

COMMENTS: Outcrop on the northeast side of a small tributary of Wasi Creek
(Assessment Report 6072, Figure 2).

COMMODITIES: Lead Zinc Silver Barite

MINERALS

SIGNIFICANT: Galena Sphalerite
COMMENTS: Disseminated and massive galena and minor disseminated sphalerite.
ASSOCIATED: Pyrite
COMMENTS: Local massive crystalline barite.
ALTERATION: Smithsonite Hydrozincite
ALTERATION TYPE: Oxidation Carbonate Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated
CLASSIFICATION: Replacement Epigenetic
TYPE: E12 Mississippi Valley-type Pb-Zn
DIMENSION: STRIKE/DIP: 150/60W TREND/PLUNGE:
COMMENTS: A southeast monocline carbonate sequence dipping 60 degrees west is cut by northwest-striking normal faults. Monoclinical folds plunge 15 degrees at 225 degrees.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	
Paleozoic	Big Creek	Undefined Formation	

LITHOLOGY: Dolomitic Carbonate Breccia
Dolomite
Dolomitic Limestone
Slate
Andesite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE:
COMMENTS: North American Paleozoic carbonates.

INVENTORY

ORE ZONE: OUTCROP REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1976
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 40.0000 Grams per tonne
Lead 5.1300 Per cent
Zinc 0.3800 Per cent

COMMENTS: Grab sample from dolomite outcrop.
REFERENCE: Assessment Report 5803.

CAPSULE GEOLOGY

The Carie occurrence is located on the east bank of a small tributary to Wasi Creek, 5 kilometres north of Wasi Lake and approximately 45 kilometres northwest of Germansen Landing. The showing is hosted within a dolomitized carbonate breccia of the Ordovician to Devonian Echo Lake Group, near the contact between the dolomite and an overlying slate unit, probably of the Upper Devonian to Lower Mississippian Big Creek Group. Post mineral propylitically-altered andesite dikes striking 270 and 220 degrees (dipping 60 degrees north and vertically, respectively) occur near the showing.

CAPSULE GEOLOGY

Disseminated and massive galena, disseminated sphalerite, hydrozincite and smithsonite and locally massive crystalline barite, detected using field tests, are hosted predominantly in a lower dolomite unit. A grab sample assayed 5.13 per cent lead, 0.38 per cent zinc and 40 grams per tonne silver (Assessment Report 5803). In 1979, two short drillholes totalling 80 metres were put down on the showing with poor results (Assessment Report 7611).

A second showing was discovered about 600 metres east of the first. This showing, consisting of sphalerite and some galena, occurs in a brecciated zone about 9 metres long and 6 metres thick.

BIBLIOGRAPHY

EMPR ASS RPT 5647, 5803, 6072, 6618, *7611
EMPR EXPL 1975-158; 1976-168; 1977-212; 1978-240
EMPR FIELDWORK 1989, pp. 101-114; 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR GEM 1974-290
EMPR OF 1990-17; 1993-2
GSC MAP 1030A
GSC MEM 274, p. 228
WWW http://infomine.com/index/properties/WASI_CREEK.html
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/05

CODED BY: GSB
REVISED BY: GNG

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 131**

NATIONAL MINERAL INVENTORY:

NAME(S): **OSI**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 00 31 N
LONGITUDE: 124 46 17 W
ELEVATION: 1620 Metres

NORTHING: 6208454
EASTING: 389554

LOCATION ACCURACY: Within 500M

COMMENTS: Location of showing along or near ridge crest (Assessment Report 5454, Figure 4 (Map 5)).

COMMODITIES: Lead

MINERALS

SIGNIFICANT: Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Proterozoic

GROUP

Ingenika

FORMATION

Stelkuz

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Limestone
Phyllite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Osi occurrence, a small occurrence of galena was located in a fault plane cutting limestone near a contact with phyllite. Both rock types can be assigned to the Upper Proterozoic Ingenika Group, Stelkuz Formation which underlies the area (Bulletin in preparation).

BIBLIOGRAPHY

EMPR ASS RPT 4955, *5454
EMPR BULL 91
EMPR FIELDWORK 1989, pp. 101-114; 1991, pp. 127-145; 1992, pp. 109-134
EMPR OF 1990-17; 1993-2
GSC MEM 274
GSC P 75-33
GSC MAP 2-1975

DATE CODED: 1992/06/17
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 132**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAM**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 04 09 N
LONGITUDE: 125 24 52 W
ELEVATION: 1700 Metres

NORTHING: 6216406
EASTING: 349702

LOCATION ACCURACY: Within 500M

COMMENTS: The location given is for the centre of the Sam claim group
(Assessment Report 21642).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Magnetite Specularite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Gabbro
Monzonite
Syenite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Sam occurrence, chalcopyrite, magnetite and specularite occur in diorite "veins" varying in width from 0.5 to 10 metres. The area is underlain by the Late Triassic to Early Cretaceous Hogem Intrusive Complex which consist of numerous intrusive bodies of distinct age. This complex varies in composition between gabbro, diorite, monzonite, syenite and alkali feldspar syenite.

BIBLIOGRAPHY

EMPR ASS RPT *21642
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/06/18
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 133**

NATIONAL MINERAL INVENTORY:

NAME(S): **TEN (MAIN)**, MAIN GRID

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 56 N
LONGITUDE: 125 30 13 W
ELEVATION: 1600 Metres

NORTHING: 6223619
EASTING: 344408

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for the centre of the Ten Main grid area of the claims (Assessment Report 21419, Map 1).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzodiorite
Gabbro
Diorite
Monzonite
Syenite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY
Copper

GRADE
0.5300 Per cent

COMMENTS: Float sample.

REFERENCE: Assessment Report 21419.

CAPSULE GEOLOGY

The region is underlain by the Late Triassic to Early Cretaceous Hogem Intrusive Complex which consists of numerous intrusive bodies of distinct age. Rocks vary in composition between gabbro, diorite, monzonite, syenite and alkali feldspar syenite (Fieldwork 1991).

In the Ten Main grid area, the dominant rock type is monzodiorite. It is intruded by small plugs and dikes of other intrusive types.

Local minor pyrite and chalcopyrite occurs in the monzodiorite as disseminations and fracture fillings. Copper values as high as 0.42 per cent were reported; gold values were below 0.065 gram per tonne (Assessment Report 21419). A quartz vein float sample containing malachite stain, disseminated chalcopyrite, bornite and molybdenum assayed 0.11 gram per tonne gold and 0.53 per cent copper (Assessment Report 21419).

BIBLIOGRAPHY

EMPR ASS RPT *21419
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11

DATE CODED: 1992/06/18
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 134**

NATIONAL MINERAL INVENTORY:

NAME(S): **TEN (NORTHEAST)**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 09 24 N
LONGITUDE: 125 26 56 W
ELEVATION: 1850 Metres

NORTHING: 6226217
EASTING: 347904

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for the central area of the Ten Northeast grid of the Ten claims (Assessment Report 21419, Map 1).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite

ASSOCIATED: Magnetite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated

CLASSIFICATION: Porphyry

TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Mesozoic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Syenite
Monzonite
Diorite
Andesite

HOSTROCK COMMENTS: The Takla rocks may be equivalent to the Chuchi Lake Formation of Nelson et al. (Fieldwork 1992).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The region is underlain by the Late Triassic to Early Cretaceous Hogem Intrusive Complex which consist of numerous intrusive bodies of distinct age. Rocks vary in composition between gabbro, diorite, monzonite, syenite and alkali feldspar syenite (Fieldwork 1991).

At the Ten Northeast grid showings, intrusions, comprising leucocratic syenite, mesocratic syenite, monzonite and diorite, are in contact with andesites of an unnamed unit, of the Takla Group, which may be equivalent to the Early Jurassic Chuchi Lake Formation. The andesites are described as moderately schistose black-green rocks containing locally abundant disseminated pyrite and magnetite.

Local minor disseminated pyrite and chalcopyrite occurs in the intrusive rock.

BIBLIOGRAPHY

EMPR ASS RPT *21419
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/06/22
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 135**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAT 3**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 15 19 N
LONGITUDE: 125 36 40 W
ELEVATION: 1600 Metres

NORTHING: 6237558
EASTING: 338247

LOCATION ACCURACY: Within 1 KM

COMMENTS: Central area of the Mat 3 claim (Assessment Report 14192).

COMMODITIES: Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Pyrite Galena Sphalerite Chalcopyrite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Augite Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1985

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

763.0000 Grams per tonne

REFERENCE: Assessment Report 14192, page 4.

CAPSULE GEOLOGY

The Mat 3 occurrence is located south of Matetlo Creek, about 10 kilometres from its confluence with the Tutizika River.

The occurrence is apparently hosted within augite andesite of the Upper Triassic Plughat Mountain Formation, Takla Group. These volcanics are in contact with the Late Triassic to Early Cretaceous Hogem Intrusive Complex, several kilometres to the south of the occurrence.

The showing is not described but reported to be of similar nature to the Mat 1 showings (094C 099) to the southeast. This showing would therefore be a quartz vein hosting galena, sphalerite, chalcopyrite, pyrite and silver sulphosalts. A sample assayed 763 grams per tonne silver (Assessment Report 14192, page 4).

BIBLIOGRAPHY

EMPR ASS RPT *14192
EMPR EXPL 1986-C378
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/06/23
DATE REVISED: 1992/06/23

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 136**

NATIONAL MINERAL INVENTORY:

NAME(S): **TUT 6**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 15 32 N
LONGITUDE: 125 43 27 W
ELEVATION: 1800 Metres

NORTHING: 6238231
EASTING: 331262

LOCATION ACCURACY: Within 500M

COMMENTS: Location of samples MR04 and WR01 (Assessment Report 21780, Figure 6).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkaic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Mesozoic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Porphyritic Andesite
Banded Tuff
Monzonite Dike
Syenite Dike
Hornblende Biotite Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY

YEAR: 1991

COMMODITY	GRADE	
Silver	10.0000	Grams per tonne
Gold	0.1500	Grams per tonne
Copper	0.8900	Per cent

COMMENTS: Sample WR01.

REFERENCE: Assessment Report 21780.

CAPSULE GEOLOGY

The Tut 6 occurrence is underlain by porphyritic andesites and banded tuffs of the Upper Triassic Plughat Mountain Formation, Takla Group. About one kilometre to the southwest of the showings is the northwest-trending contact with the Late Triassic to Early Cretaceous Hogem Intrusive Complex, here consisting of hornblende biotite monzonite. The contact is characterized by a swarm of pyritic granite to syenite dikes (up to 3 metres wide) crosscutting the volcanics.

Fine-grained chalcopyrite and pyrite occur in sheared, silicified monzonite or syenite dikes. One sample assayed 0.89 per cent copper, 0.15 gram per tonne gold and 10.0 grams per tonne silver (Assessment Report 21780).

BIBLIOGRAPHY

EMPR ASS RPT *21780
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 1030A

DATE CODED: 1992/06/23
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 137**

NATIONAL MINERAL INVENTORY:

NAME(S): **TUT 3**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 16 50 N
LONGITUDE: 125 40 09 W
ELEVATION: 1550 Metres

NORTHING: 6240508
EASTING: 334761

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for Sample KR07 (Assessment Report 21780, Figure 6).

COMMODITIES: Gold Silver Copper Molybdenum

MINERALS

SIGNIFICANT: Malachite Molybdenite
ASSOCIATED: Quartz
ALTERATION: Malachite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic Mesozoic	Takla	Plughat Mountain	Hogem Intrusive Complex

LITHOLOGY: Porphyritic Andesite
Banded Tuff
Hornblende Biotite Monzonite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1991
SAMPLE TYPE: Chip	
COMMODITY	GRADE
Silver	79.6000 Grams per tonne
Gold	2.0200 Grams per tonne
Copper	0.0260 Per cent

COMMENTS: From a 20-centimetre chip sample.
REFERENCE: Assessment Report 21780.

CAPSULE GEOLOGY

The Tut 3 occurrence is located about 225 kilometres northwest of Fort St. James, 3 kilometres south of Tutizza Lake.

The area is underlain by porphyritic andesites and banded tuffs of the Upper Triassic Plughat Mountain Formation, Takla Group. The eastern contact of the Late Triassic to Early Cretaceous Hogem Intrusive Complex, here consisting of hornblende biotite monzonite, occurs several kilometres to the west. A small diorite stock intrudes the volcanics about one kilometre to the east of the showing.

A vuggy limonite-stained quartz vein in andesite contains traces of disseminated malachite and molybdenite. A 20-centimetre chip sample assayed 2.02 grams per tonne gold, 79.6 grams per tonne silver and 0.026 per cent copper (Assessment Report 21780).

BIBLIOGRAPHY

EMPR ASS RPT *21780
EMPR FIELDWORK 1991, pp. 127-145
EMPR OF 1992-11
GSC MEM 274

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
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PAGE: 250
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 1030A

DATE CODED: 1992/06/23
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 138**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAWK (AD)**, AD, DOVE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 02 07 N
LONGITUDE: 125 40 26 W
ELEVATION: 1500 Metres

NORTHING: 6213231
EASTING: 333410

LOCATION ACCURACY: Within 500M

COMMENTS: The coordinates are for the centre of the AD grid (Assessment Report 21412, Map 2). The Dove claims (094C 063) once covered the area of this showing. See also 094C 139 and 140.

COMMODITIES: Gold Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Igneous-contact Hydrothermal Epigenetic
DIMENSION: 200 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimension of silicified zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic Mesozoic			Duckling Creek Syenite Complex Hogem Intrusive Complex

LITHOLOGY: Alkali Granite
Syenite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is a phase of the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Quesnel

INVENTORY

ORE ZONE: STOCKWORK REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Chip
COMMODITY: Gold GRADE
96.0000 Grams per tonne

COMMENTS: From a 3-metre chip sample.
REFERENCE: Assessment Report 21412, page 12.

CAPSULE GEOLOGY

The Hawk property is located within the Middle to Early Jurassic Duckling Creek Syenite Complex, one of several phases comprising the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The Ad grid area is underlain by the contact, as shown by drilling, of alkali granite and mesocratic syenite. Gold mineralization is restricted to white quartz veins and stockworks within the alkali granite. Pyrite-chalcopyrite-galena-sphalerite-rich quartz veins up to 30 centimetres thick were noted within the dense stockwork system. Intense silicification of hostrocks accompanies the veining. This zone was traced for an apparent length of 200 metres. Rock chip samples from the zone yielded a high value of 96.0 grams per tonne gold across 3 metres (Assessment Report 21412, page 12). A subsequent short drill program (8 holes) intersected 19.9 grams per tonne gold over 1.5 metres of 9.3 grams per tonne gold over 2.8 metres down dip of the surface sampling. A new quartz vein, the Zulu vein, was discovered 400 metres south of the AD vein in September 2002. It trends parallel to the AD vein and can be traced on surface intermittently for apparently 460 metres and ranges up to 1.2 metres wide. A grab sample from the vein

CAPSULE GEOLOGY

assayed 46.80 grams per tonne gold and 121.0 grams per tonne silver (Press Release, September 17, 2002).

A second new quartz vein, the Rainbow vein, was discovered in 2002. It is located 200 metres south of the Zulu vein, is exposed over a strike length of 315 metres and reaches up to 0.75 metre true width. A chip sample over 0.75 metre assayed 18.00 grams per tonne gold and 39.00 grams per tonne silver (Press Release, October 4, 2002).

The gold mineralization was discovered by Cyprus (Gold) Canada in 1990. The property was also explored by Amoco Canada in 1974 for alkalic copper-gold porphyry deposits. Amoco drilled four holes, with the best intersections obtained being 36.2 metres of 0.39 per cent copper, 15.2 metres of 0.76 per cent copper and 20.9 metres of 0.27 per cent copper.

Redcorp Ventures Ltd. acquired a 100 per cent interest in the Hawk gold-copper property in February 2002.

Redcorp Ventures Ltd. carried out surface mapping, sampling and soil sampling in 2002 in the vicinity of the AD (094C 138) and Southwest (094C 140) MINFILE occurrences. Mineralized float found 800 metres along strike from the AD vein assayed 22.1 grams per tonne gold and 30.6 grams per tonne silver, suggesting a strike extent of 1000 metres for the vein. A new mineralized vein-bearing structure was located between the Hawk (AD) and the Hawk (Radio) (PR REL Redcorp Ventures Ltd., September 4, 2002).

Redcorp Ventures Ltd. core drilled the Hawk AD vein in 2002. The best assay was returned from drillhole HK02006 which intersected 8.60 grams per tonne gold, 35.37 grams per tonne silver and 0.99 per cent copper over a 3.85 metre core length (1.6-metre estimated true width) within a wider section which assayed 4.66 grams per tonne gold, 25.06 grams per tonne silver and 0.48 per cent copper over an 11.59-metre core length (5.0-metre estimated true width) (Press Release, Redcorp Ventures Ltd., October 15, 2002). Five drill holes tested the Zulu vein over a strike length of 60 metres and to a vertical depth of 100 metres. This vein, which has been traced on surface for 450 metres along strike over a vertical range of 150 metres returned a best drill core assay of 29.27 grams per tonne gold, 6.80 grams per tonne silver and 0.82 per cent copper over 0.25 metre (0.2 metre estimated true width).

BIBLIOGRAPHY

EM EXPL 2002-13-28
EMPR ASS RPT *21412, 24378
EMPR BULL 70
EMPR FIELDWORK 1991, pp. 127-145; 2002, pp. 97-114
EMPR OF 1992-11
GSC MAP 1030A
GSC MEM 274
N MINER Sept.9, Oct.28, Dec.2, 2002
PR REL (Redcorp Ventures Ltd., Feb.11, Oct.15, 2002)
WWW <http://www.infomine.com/>

DATE CODED: 1992/06/23
DATE REVISED: 1992/06/29

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 139**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAWK (RADIO)**, RADIO, DOVE

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 01 22 N
LONGITUDE: 125 40 06 W
ELEVATION: 1700 Metres

NORTHING: 6211827
EASTING: 333702

LOCATION ACCURACY: Within 500M

COMMENTS: The coordinates are for the centre of the Radio vein grid (Assessment Report 21412, Map 1). The Dove claims (094C 063) once covered the area of this showing.

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 100 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The main Radio vein is from 15 centimetres to 1.5 metres in width, averaging 40 centimetres in width.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Syenite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is a phase of the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Quesnel

INVENTORY

ORE ZONE: VEIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY: Gold GRADE: 30.8600 Grams per tonne
COMMENTS: This gold grade is the highest value obtained. The average value was reported to be 9.94 grams per tonne.
REFERENCE: Assessment Report 21412, page 15.

CAPSULE GEOLOGY

The Hawk property is located within the Middle to Early Jurassic Duckling Creek Syenite Complex, one of several phases comprising the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

The Radio vein grid area is underlain by leucocratic and mesocratic syenite and intensely sheared leucocratic biotite muscovite syenite. The latter is interpreted as a shear zone approximately 25 metres in width and exhibiting an east trend. The Radio vein is the only continuous quartz vein discovered, although two small (less than 10 centimetres wide and a few metres in strike length) gold-bearing veins, parallel to the Radio vein, were also discovered. The Radio vein itself has been traced for 100 metres along strike until it is covered by overburden. Widths range from less than 15 centimetres to 1.5 metres; the average is less than 40 centimetres. Grades range between 0.59 and 30.86 grams per tonne gold and average 9.94 grams per tonne gold (Assessment Report 21412, page 15). Sulphides present include abundant coarse pyrite and chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT *21412

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 254
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR BULL 70
EMPR FIELDWORK 1991, pp. 127-145; 2002, pp. 97-114
GSC MAP 1030A
GSC MEM 274
N MINER Sept.9, 2002
PR REL Redcorp. Ventures Ltd., Sept.17, Oct.4,15, 2002

DATE CODED: 1992/06/23
DATE REVISED: 1992/06/29

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 140**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAWK (HSW)**, HSW

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 01 40 N
LONGITUDE: 125 42 17 W
ELEVATION: 1600 Metres

NORTHING: 6212471
EASTING: 331457

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the HSW showing on the Hawk claim (Assessment Report 21412, Map 1). The Dove claims (094C 063) once covered the area of this showing.

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein Shear
CLASSIFICATION: Porphyry Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Leucocratic Syenite
Syenite
Mafic Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Quesnel
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Gold 41.1400 Grams per tonne
COMMENTS: The highest assay from a quartz vein sample.
REFERENCE: Assessment Report 21412, page 18.

CAPSULE GEOLOGY

The Hawk property is located within the Middle to Early Jurassic Duckling Creek Syenite Complex, one of several phases comprising the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

The main rock types in the HSW area are leucocratic and mesocratic syenite, the latter intruding the former. Numerous clasts of mafic (Takla Group(?)) volcanic rocks were observed, some contain abundant pyrite and chalcopyrite but too small to be of economic significance.

The prominent structural feature present is a northwest-trending gossanous fault zone containing pyrite and chalcopyrite. Samples of gossanous material, however, showed a lack of gold enrichment.

Several samples from a 4 to 30-centimetre wide quartz vein assayed high in gold, the highest being 41.14 grams per tonne (Assessment Report 21412, page 18). Another sample taken of leucocratic syenite assayed 4.46 grams per tonne gold (Assessment Report 21412). Copper values from these samples ranged between 0.014 and 0.17 per cent copper.

BIBLIOGRAPHY

EM EXPL 2002-13-28
EMPR ASS RPT *21412
EMPR BULL 70
EMPR FIELDWORK 1991, pp. 127-145; 2002, pp. 97-114
EMPR OF 1992-11

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 256
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 1030A
GSC MEM 274

DATE CODED: 1992/06/29
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 141**

NATIONAL MINERAL INVENTORY: 094C6 Pb1

NAME(S): **KNOLL, BURN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 28 30 N
LONGITUDE: 125 30 59 W
ELEVATION: 1700 Metres

NORTHING: 6261786
EASTING: 345008

LOCATION ACCURACY: Within 500M

COMMENTS: Located near the top of a rusty weathering knoll south of the Swannell River (D. DuPre, Firesteel Res., personal communication, 1992).

COMMODITIES: Lead Zinc Silver Barite

MINERALS

SIGNIFICANT: Galena Sphalerite Barite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Breccia Vein
CLASSIFICATION: Replacement Hydrothermal Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	

LITHOLOGY: Brecciated Siliceous Dolomite

HOSTROCK COMMENTS: The hostrock has recently been assigned to the Middle Ordovician to Early Devonian Echo Lake Group (Open File 1993-2).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1973
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Silver	19.8800 Grams per tonne
Barite	1.4000 Per cent
Lead	3.6400 Per cent
Zinc	0.1000 Per cent

REFERENCE: Assessment Report 4605, page 7.

CAPSULE GEOLOGY

The Knoll lead-zinc occurrence is located 15 kilometres east-northeast of Aiken Lake, approximately 97 kilometres northeast of Germansen Landing.

Sphalerite, galena and barite occur in brecciated, silicified dolostone of the Middle Ordovician to Early Devonian Echo Lake Group (D. DuPre, personal communication, October 1992). The mineralization occurs near the top of a knoll, near its northwest corner, within a rusty-weathering area measuring 200 by 200 metres. A float sample of mineralized dolomite found downslope from the gossanous area assayed 3.64 per cent lead, 0.1 per cent zinc, 19.88 grams per tonne silver and 1.4 per cent barium (Assessment Report 4605, page 7).

BIBLIOGRAPHY

EMPR ASS RPT *4605, 4608
EMPR FIELDWORK 1991, pp. 127-145; 1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
EMPR GEM 1972-477; 1973-398
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1985/07/24
DATE REVISED: 1992/10/14

CODED BY: GSB
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 142**

NATIONAL MINERAL INVENTORY:

NAME(S): **ZIP**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 18 59 N
LONGITUDE: 125 26 03 W
ELEVATION: 1070 Metres

NORTHING: 6243956
EASTING: 349446

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location (Open File 1993-2, Map Number 6).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Porphyry

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Zip occurrence, highly fractured, grey to maroon tuffs of the Upper Triassic to Lower Jurassic Takla Group host pervasive quartz-carbonate veins up to 2 centimetres in width. Minor malachite staining is noted in some spots. A geochemical analysis of a sample yielded negligible results for gold, silver and copper (Open File 1993-2, Map Number 6).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al. - in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/13
DATE REVISED: 1992/12/13

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 143**

NATIONAL MINERAL INVENTORY:

NAME(S): **SING**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 25 33 N
LONGITUDE: 125 27 38 W
ELEVATION: 1235 Metres

NORTHING: 6256191
EASTING: 348250

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station (Open File 1993-2, Map Number 55).

COMMODITIES: Lead

MINERALS

SIGNIFICANT: Galena
ASSOCIATED: Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Replacement Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Paleozoic	Echo Lake	Undefined Formation	

LITHOLOGY: Limestone

HOSTROCK COMMENTS: The Echo Lake Group is Middle Ordovician to Early Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Sing occurrence, finely disseminated galena occurs with coarsely crystalline barite within coarsely crystalline limestone of the Middle Ordovician to Early Devonian Echo Lake Group. Area rocks are marked by rusty weathering.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/13
DATE REVISED: 1992/12/14

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 144**

NATIONAL MINERAL INVENTORY:

NAME(S): **RITZ**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 29 44 N
LONGITUDE: 125 34 06 W
ELEVATION: 1910 Metres

NORTHING: 6264191
EASTING: 341895

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping location (Open File 1993-2, Map Number 51).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Sulphide Malachite
COMMENTS: Unnamed sulphides with malachite staining occur in quartz veins.
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Proterozoic	Ingenika	Tsaydiz	

LITHOLOGY: Limestone
Phyllite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The area of the Ritz occurrence is underlain by brown limestone and phyllite of the Upper Proterozoic Tsaydiz Formation, Ingenika Group. The rocks are cut by quartz veins, up to 50 centimetres thick, which are reported to contain carbonate and sulphides with malachite staining.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/13
DATE REVISED: 1992/12/14

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 145**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 19 37 N
LONGITUDE: 125 33 35 W
ELEVATION: 1980 Metres

NORTHING: 6245412
EASTING: 341726

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and sample location (Open File 1993-2, Map Number 7).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1992

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

0.1600

Per cent

REFERENCE: Open File 1992-3, Map Number 7.

CAPSULE GEOLOGY

At the Ran occurrence, volcanic and sedimentary rocks of the Upper Triassic Plughat Mountain Formation (informal usage), Takla Group, are cut by a 10 to 20 metre thick quartz vein. Rusty fractures are coated with malachite and chalcopyrite. A sample taken for geochemical analysis yielded 0.16 per cent copper, 0.005 gram per tonne gold and 4 grams per tonne silver (Open File 1993-2, Map Number 7).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; *1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/13
DATE REVISED: 1992/12/14

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 146**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHOICE** SH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)

LATITUDE: 56 16 09 N
LONGITUDE: 125 39 11 W
ELEVATION: 1985 Metres

NORTHING: 6239202
EASTING: 335709

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station location (Open File 1993-2, Map Number 9).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Silica Carbonate Epidote Malachite
ALTERATION TYPE: Silicific'n Carbonate Epidote Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Porphyry

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Volcanic Tuff
Augite Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Choice occurrence, minor disseminated chalcopyrite with malachite haloes and malachite on fractures surfaces occur in volcanic tuffs and augite porphyry (possibly flows) of the Upper Triassic Plughat Mountain Formation (informal usage), Takla Group. The rocks are locally highly silica, carbonate and epidote altered.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/13
DATE REVISED: 1992/12/14

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 147**

NATIONAL MINERAL INVENTORY:

NAME(S): **ACHE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 15 24 N
LONGITUDE: 125 41 34 W
ELEVATION: 2105 Metres

NORTHING: 6237907
EASTING: 333196

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station location (Open File 1993-2, Map Number 11).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Epidote Calcite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Augite Porphyry Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Ache showing is hosted in augite porphyry agglomerate of the Upper Triassic Plughat Mountain Formation (informal usage), Takla Group. Blebs of chalcopyrite and traces of malachite occur on fracture surfaces and with epidote and calcite veining.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/13
DATE REVISED: 1992/12/14

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 148**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANT**, ABE 2

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W 094C05E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 21 15 N
LONGITUDE: 125 45 40 W
ELEVATION: 1960 Metres

NORTHING: 6248922
EASTING: 329399

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station (Open File 1993-2, Map Number 17).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Pyroxenite
Gabbro

HOSTROCK COMMENTS: The Jurassic or older intrusion may be part of the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Ant occurrence, a Jurassic or older pyroxenite intrusion, possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex, is stained with malachite in a rusty-weathering zone. A nearby gabbroic phase also shows traces of malachite.

BIBLIOGRAPHY

EMPR ASS RPT 22121, 22860
EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1992/12/14
DATE REVISED: 1992/12/14

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 149**

NATIONAL MINERAL INVENTORY:

NAME(S): **WELT**, ABE 1

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 20 54 N
LONGITUDE: 125 47 13 W
ELEVATION: 1900 Metres

NORTHING: 6248337
EASTING: 327777

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and rock sample location (Open File 1993-2, Map Number 18).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Igneous-contact
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Jurassic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Volcanic
Monzodiorite

HOSTROCK COMMENTS: The monzodiorite is Jurassic or older and may be related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1992

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

6.0000

Grams per tonne

Copper

2.1300

Per cent

REFERENCE: Open File 1993-2, Map Number 18.

CAPSULE GEOLOGY

At the Welt occurrence, malachite occurs at the contact between Upper Triassic Plughat Mountain Formation (informal usage), Takla Group volcanic rocks and a monzodioritic phase of a Jurassic or older intrusion that is possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. A sample of the mineralized material analysed 2.13 per cent copper, 6 grams per tonne silver, and 0.025 gram per tonne gold (Open File 1993-2).

BIBLIOGRAPHY

EMPR ASS RPT 22121, 22860, 23284
EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MAP 1030A
GSC MEM 274

DATE CODED: 1992/12/14
DATE REVISED: 1997/09/09

CODED BY: GJP
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094C 150**

NATIONAL MINERAL INVENTORY:

NAME(S): **BELL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 23 48 N
LONGITUDE: 125 49 33 W
ELEVATION: 1900 Metres

NORTHING: 6253812
EASTING: 325596

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station location (Open File 1993-2, Map Number 23).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Igneous-contact
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	Unnamed/Unknown Informal
Jurassic			

LITHOLOGY: Gabbro
Volcanic
Sediment/Sedimentary

HOSTROCK COMMENTS: The Jurassic intrusion may be related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Bell occurrence, volcanic and sedimentary rocks of the Upper Triassic Plughat Mountain Formation (informal usage) of the Takla Group are intruded by a gabbroic phase of a Jurassic or older intrusion. The gabbro is possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. A small area of the gabbro contains disseminated malachite and very minor chalcopyrite.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/14
DATE REVISED: 1992/12/14

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094C 151**

NATIONAL MINERAL INVENTORY:

NAME(S): **MISTY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 22 53 N
LONGITUDE: 125 51 41 W

NORTHING: 6252203
EASTING: 323331

ELEVATION: 1900 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and sample location (Open File 1993-2, Map Number 22).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Malachite Azurite
ASSOCIATED: Carbonate
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1992

COMMODITY
Silver
Copper

<u>GRADE</u>	
20.0000	Grams per tonne
1.1800	Per cent

REFERENCE: Open File 1993-2, Map Number 22.

CAPSULE GEOLOGY

At the Misty occurrence, hydrothermally altered volcanic and sedimentary rocks of the Upper Triassic Plughat Mountain Formation (informal usage), Takla Group are cut by a carbonate vein mineralized with malachite and azurite (Fieldwork 1992). An analysed sample of the mineralized material yielded 1.18 per cent copper, 20 grams per tonne silver and nil gold (Open File 1993-2, Map Number 22).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; *1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/14
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 152**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHOT**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 23 52 N
LONGITUDE: 125 51 35 W
ELEVATION: 1530 Metres

NORTHING: 6254022
EASTING: 323510

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and sample location (Open File 1993-2, Map Number 24).

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Malachite Azurite
ALTERATION: Malachite Azurite Silica
ALTERATION TYPE: Oxidation Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic Porphyry

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Gabbro

HOSTROCK COMMENTS: The unnamed intrusion may be related to the Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1992

COMMODITY	GRADE	
Gold	0.5200	Grams per tonne
Copper	0.5700	Per cent

REFERENCE: Open File 1993-2, Map Number 24.

CAPSULE GEOLOGY

At the Shot occurrence, fine to medium-grained gabbro of an unnamed Jurassic or older intrusion (possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex) contains rusty zones mineralized with malachite and azurite, and possibly chalcopyrite. The mineralized area is small - less than one square metre. Quartz veining and silica alteration is present. A sample taken for analysis yielded 0.57 per cent copper and 0.52 gram per tonne gold (Open File 1993-2, Map Number 24).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; *1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/14
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 153**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANORAK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 25 04 N
LONGITUDE: 125 57 43 W
ELEVATION: 1850 Metres

NORTHING: 6256514
EASTING: 317299

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station (Open File 1993-2, Map Number 25).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite Pyrite
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Upper Triassic
Cretaceous-Tertiary

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Diorite
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Anorak occurrence, malachite occurs on fractures at the contact between rock of the Upper Triassic Plughat Mountain Formation (informal usage), Takla Group and a Tertiary or Cretaceous diorite intrusion (Fieldwork 1992). At the contact, Takla rocks are foliated and the diorite is sheared. The diorite contains from 1 to 5 per cent pyrite and can be very siliceous.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 154**

NATIONAL MINERAL INVENTORY:

NAME(S): **JUMP**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 28 06 N
LONGITUDE: 125 55 45 W
ELEVATION: 2050 Metres

NORTHING: 6262052
EASTING: 319560

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and rock sample location (Open File 1993-2, Map Number 32).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Igneous-contact

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Augite Feldspar Porphyry Agglomerate
Hornblende Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY
Copper

YEAR: 1992

GRADE
0.4800 Per cent

REFERENCE: Open File 1993-2, Map Number 32.

CAPSULE GEOLOGY

The Jump showing consists of minor occurrences of malachite and possibly chalcopyrite hosted in a flow of augite/feldspar porphyry agglomerate of the Upper Triassic Plughat Mountain Formation (informal usage), Takla Group (Fieldwork 1992; Open File 1993-2). The mineralization appears to be related to a mafic-rich marginal phase of a hornblende porphyry dike which cuts the Takla rock. There is some local shearing but its association with the mineralization is unclear.

A sample of the mineralization taken for analysis yielded 0.48 per cent copper 0.015 gram per tonne gold, 0.021 per cent zinc and 0.013 per cent lead (Open File 1993-2, Map Number 32).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; *1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 155**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAVE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 29 24 N
LONGITUDE: 125 55 13 W
ELEVATION: 1800 Metres

NORTHING: 6264439
EASTING: 320210

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station (Open File 1993-2, Map Number 38).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite Chalcopyrite
COMMENTS: An extensive gossan marks the mineralized zone.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Volcanic
Sediment/Sedimentary
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Rave showing, an extensive gossan zone in sedimentary and volcanic rocks of the Upper Triassic Plughat Mountain Formation (informal usage), Takla Group hosts small amounts of malachite and chalcopyrite (Fieldwork 1992).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 156**

NATIONAL MINERAL INVENTORY:

NAME(S): **LONELY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 28 30 N
LONGITUDE: 125 58 25 W
ELEVATION: 1990 Metres

NORTHING: 6262911
EASTING: 316855

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and sample location (Open File 1993-2, Map Number 31).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Malachite Pyrite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Plughat Mountain	Unnamed/Unknown Informal
Jurassic			

LITHOLOGY: Diorite
Gabbro
Meta Tuff
Gabbroic Pegmatite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1992

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	7.0000	Grams per tonne
Gold	0.1100	Grams per tonne
Copper	1.7000	Per cent

REFERENCE: Open File 1993-2, Map Number 31.

CAPSULE GEOLOGY

At the Lonely showing, diorite and gabbro of a Jurassic or older intrusion (possibly related to the Late Triassic to Early Cretaceous Hogem Intrusive Complex) has intruded metatuffs(?) of the Upper Triassic Plughat Mountain Formation (an informally named formation of the Takla Group). Malachite and pyrite occur on some fracture surfaces in diorite, and a gabbroic pegmatite contains fine-grained white veins locally rich in malachite and pyrite (Fieldwork 1992).

A sample of the pegmatitic material analysed 1.70 per cent copper, 0.11 gram per tonne gold and 7 grams per tonne silver (Open File 1993-2, Map Number 31).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; *1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 157**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOWL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C05W 094C12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 29 59 N
LONGITUDE: 125 59 36 W
ELEVATION: 2035 Metres

NORTHING: 6265714
EASTING: 315761

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and sample location (Open File 1993-2, Map Number 40).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Porphyry

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Plughat Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Tuff
Agglomerate
Ultramafic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1992

COMMODITY

GRADE

Silver	18.0000	Grams per tonne
Gold	0.7700	Grams per tonne
Copper	1.0100	Per cent

REFERENCE: Open File 1993-2, Map Number 40.

CAPSULE GEOLOGY

At the Howl showing, tuffs and agglomerates of the Upper Triassic Plughat Mountain Formation (an informally named unit of the Takla Group) are cut by small quartz-carbonate veins, from 2 to 10 centimetres in thickness. Malachite and chalcopyrite are found in the veins and minor malachite occurs on fracture surfaces in the area. Some mineralization seems to be associated with small ultramafic dikes which intrude the Takla rocks.

A sample of the mineralized vein analysed 1.01 per cent copper, 0.77 gram per tonne gold, 18 grams per tonne silver and 0.03 per cent zinc (Open File 1993-2, Map Number 40).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; *1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 158**

NATIONAL MINERAL INVENTORY:

NAME(S): **WEBB**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 33 52 N
LONGITUDE: 125 51 57 W
ELEVATION: 1995 Metres

NORTHING: 6272580
EASTING: 323907

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station (Open File 1993-2, Map Number 42).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Malachite Mariposite Ankerite
ALTERATION TYPE: Oxidation Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic			Lay Range Assemblage

LITHOLOGY: Serpentinite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Webb showing, malachite staining occurs on fracture surfaces in an ankerite-altered fault zone within a massive serpentinite body of the Mississippian to Permian Lay Range assemblage. Abundant mariposite is also observed.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; 1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 159**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOOT**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 31 24 N
LONGITUDE: 125 45 53 W
ELEVATION: 1975 Metres

NORTHING: 6267751
EASTING: 329933

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and sample location (Open File 1993-2, Map Number 43).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Malachite Silica
ALTERATION TYPE: Oxidation Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic			Lay Range Assemblage

LITHOLOGY: Tuffaceous Sandstone
Tuffaceous Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Harper Ranch

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1992

COMMODITY
Copper

GRADE
2.6100 Per cent

REFERENCE: Open File 1993-2, Map Number 43.

CAPSULE GEOLOGY

The area of the Hoot occurrence is underlain by massive to well-bedded tuffaceous sandstones to siltstones of the Mississippian to Permian Lay Range assemblage. A small amount of malachite staining is associated with an area of extensive shearing. The rocks are locally very siliceous. A sample taken for analysis yielded 2.61 per cent copper and anomalous gold and silver values (Open File 1993-2, Map Number 43).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 127-145; *1992 (Ferri et al., in press)
EMPR OF 1992-11; *1993-2
GSC MEM 274
GSC MAP 1030A

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 160**

NATIONAL MINERAL INVENTORY:

NAME(S): **THRUST**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 07 53 N
LONGITUDE: 124 54 12 W
ELEVATION: 1050 Metres

NORTHING: 6222335
EASTING: 381705

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and sample location (Open File 1993-2, Map Number 60).

COMMODITIES: Zinc

Copper

MINERALS

SIGNIFICANT: Sphalerite Chalcopyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Disseminated
CLASSIFICATION: Replacement Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Paleozoic
Cambrian-Ordovician

GROUP

Echo Lake
Razorback

FORMATION

Undefined Formation
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dolomite
Dolomite Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Thrust occurrence, patchy sphalerite and blebs of chalcopyrite occur in recrystallized dolostone (Echo Lake Group) in the middle of the brecciated zone of the End Lake thrust fault. The thrust places rocks of the Cambrian to Ordovician Razorback Group on top of dolomite breccias of the Middle Ordovician to Lower Devonian Echo Lake Group.

BIBLIOGRAPHY

EMPR FIELDWORK 1989, pp. 101-114; *1992, pp. 109-134
EMPR OF 1990-17; 1993-2
EMPR BULL 91
GSC P 75-33
GSC MAP 2-1975

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094C 161**

NATIONAL MINERAL INVENTORY:

NAME(S): **UPPER OSPREY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094C02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 56 08 05 N
LONGITUDE: 124 53 24 W
ELEVATION: 1000 Metres

NORTHING: 6222683
EASTING: 382543

LOCATION ACCURACY: Within 500M

COMMENTS: Regional mapping station and sample location (Open File 1993-2, Map Number 59).

COMMODITIES: Copper Zinc Lead

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Sphalerite Galena Bornite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein Massive
CLASSIFICATION: Replacement Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Echo Lake	Undefined Formation	

LITHOLOGY: Dolomite
Quartz Latite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

At the Osprey showing, primary and secondary dolomite breccias of the Middle Ordovician to Lower Devonian Echo Lake Group have been highly metamorphosed by veining and replacement. A large gossanous zone, at least 10 by 20 metres in area, contains several zones of massive sulphide, each exposed over areas of 10 by 5 metres and greater. Sulphides include pyrite, chalcopyrite and sphalerite, plus/minus galena and bornite.

A second showing, less than 100 metres away, occurs in a quartz latite intrusion, pipe-like in shape and about 8 metres across. Mineralization consists of pyrite plus/minus chalcopyrite and malachite.

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EMPR BULL 91
GSC P 75-33
GSC MAP 2-1975

DATE CODED: 1992/12/15
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094D 001**

NATIONAL MINERAL INVENTORY: 094D3 Au1,Cu4

NAME(S): **MOT 1**, RIM 1-30, HUESTIS,
FC, GOUDRIDGE, SOLOMON,
MORAN, CHARLES

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:
LATITUDE: 56 04 12 N
LONGITUDE: 127 05 34 W
ELEVATION: 2000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Huestis zone (Assessment Report 19610).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6215510
EASTING: 618726

COMMODITIES: Gold Molybdenum Silver Tungsten Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Sphalerite Chalcopyrite Galena Molybdenite
Pyrrhotite Arsenopyrite Scheelite
ASSOCIATED: Quartz Pyrite Pyrrhotite Arsenopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au L01 Subvolcanic Cu-Ag-Au (As-Sb)
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Undefined Formation	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Feldspar Porphyry
Argillite
Greywacke
Pebble Conglomerate
Granodiorite
Granodiorite Dike
Granodiorite Sill

HOSTROCK COMMENTS: The intrusives are possibly related to the Eocene Kastberg Intrusions or the Cretaceous Bulkley Intrusions, which occur further south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Bowser Lake
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1962
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 16.1000 Grams per tonne
Gold 11.9000 Grams per tonne

COMMENTS: A 3-metre chip sample from the Goudridge zone.
REFERENCE: Assessment Report 20505.

ORE ZONE: VEIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1962
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Silver 322.3000 Grams per tonne
Gold 20.6000 Grams per tonne

COMMENTS: A 1.5-metre drill core intersection from the Huestis zone.
REFERENCE: Assessment Report 20505.

CAPSULE GEOLOGY

The Mot 1 prospect is located approximately 3.5 kilometres northwest of Motase Lake.
The prospect comprises five zones which are, from northwest to

CAPSULE GEOLOGY

southeast, the Solomon, Goudridge, Huestis, Moran and Charles (Assessment Report 20505). Of these five zones, the Huestis and the Goudridge zones are considered to be the most important.

The zones occur along the eastern margin of the Bowser basin. The area is underlain by Middle to Upper Jurassic Bowser Lake Group sediments. Further to the east, volcanics of the Upper Triassic Takla Group and the Lower to Middle Jurassic Hazelton Group dominate. The rocks are intruded by feldspar porphyry and granodiorite dykes and sills. These intrusions are related to either the Eocene Kastberg Intrusions or the Cretaceous Bulkley Intrusions. The Bulkley Intrusions occur further to the south.

All of the zones lie within a west-northwest trending gossan, approximately 3 kilometres long. This zone consists of fine-grained argillite, greywacke and coarse pebble conglomerate, which strike northwest and dip southwest. Thin quartz veins, commonly striking about 10 degrees with vertical to steep easterly dips, cut both the feldspar porphyry and the sediments. The quartz veins contain white quartz, a few vugs and a small amount of disseminated sulphides. The sulphides are pyrite, sphalerite, chalcopyrite, galena, molybdenite, pyrrhotite, arsenopyrite and scheelite (Assessment Report 10432).

A 1.5-metre diamond drill interval from the Huestis zone contained 20.6 grams per tonne gold and 322.3 grams per tonne silver (Assessment Report 20505). A 3-metre chip sample from the Goudridge zone assayed 11.9 grams per tonne gold and 16.1 grams per tonne silver (Assessment Report 20505).

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EMPR GEM 1973-402
EMPR OF 1994-14, 2001-18
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/28

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 280
REPORT: RGEN0100

MINFILE NUMBER: **094D 002**

NATIONAL MINERAL INVENTORY: 094D2 Cu1

NAME(S): **CAN**, CAN 26, MOTASE SOUTH,
MOTASE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D02W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 02 19 N
LONGITUDE: 126 57 14 W
ELEVATION: 1920 Metres

NORTHING: 6212265
EASTING: 627474

LOCATION ACCURACY: Within 500M
COMMENTS: Centre of known mineralization on the Can 26 claim (Assessment Report 4686).

COMMODITIES: Copper Lead Zinc

MINERALS

SIGNIFICANT: Bornite Chalcocite Galena Sphalerite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Andesite
Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Can occurrence, on the Can 26 claim, is located on top of a ridge approximately 4 kilometres south of Drift Lake (Assessment Report 4686).

The showing is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) tuffs, andesites and agglomerates. The strata strike northwest, dip moderately southwest and are intensely fractured in places.

Mineralization consists of bornite and chalcocite with minor galena, sphalerite and pyrite. The sulphides occur as disseminations in the volcanics or in small veinlets.

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EMPR GEM 1973-401,402
EMPR ASS RPT *4686
GSC MAP 962A
GSC MEM *251, p. 62
GSC OF 342
GSC P 76-29
EMR MP CORPFILE (Bethlehem Copper Corp. Ltd.)
GCNL #74, 1964

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/30

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 002**

MINFILE NUMBER: **094D 003**

NATIONAL MINERAL INVENTORY: 094D2 Cu2

NAME(S): **BEARNX**, BEAR LAKE, PETEKA 2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D02W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 09 27 N
LONGITUDE: 126 56 43 W
ELEVATION: 1610 Metres

NORTHING: 6225510
EASTING: 627617

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization, approximately 1.5 kilometres east of Peteyaz Peak (Assessment Report 14424).

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica Carbonate Chlorite Epidote Hematite

ALTERATION TYPE: Malachite Carbonate Chloritic Epidote Oxidation
Silific'n Hematite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: STRIKE/DIP: 145/55W TREND/PLUNGE:
COMMENTS: Average strike and dip of one of the major joint sets in the area (Assessment Report 14424).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Aphanitic Andesite
Tuff
Agglomerate
Porphyritic Flow
Sediment/Sedimentary
Quartz Feldspar Porphyry Dike

HOSTROCK COMMENTS: The dykes are possibly related to the Eocene Kastberg Intrusions (Assessment Report 14424).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Takla Trench
TERRANE: Stikine

INVENTORY

ORE ZONE: VEIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Gold 5.9700 Grams per tonne
Copper 4.4000 Per cent
COMMENTS: Sample from a carbonate vein to the north of the Bearnx.
REFERENCE: Assessment Report 14424.

CAPSULE GEOLOGY

The Bearnx occurrence, on the Peteka 2 claim, is located approximately 1.5 kilometres east of Peteyaz Peak. The Peteka 1-4 claim group is underlain by Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. The volcanics are predominantly tuffs, agglomerates and grey to green andesites. Minor porphyritic (plagioclase and/or hornblende) flows and interflow sedimentary rocks are also present. The volcanic rocks are intruded by narrow quartz feldspar porphyry dykes which are 1 to 3 metres wide and strike northeast. The dykes, fine to medium-grained, are possibly related to the Eocene Kastberg Intrusions.

CAPSULE GEOLOGY

Alteration consists of minor chloritization of the mafic to intermediate volcanics, moderate epidote alteration of the tuffs and agglomerates, and hematization of the intermediate volcanics.

The attitudes of major joints in this area are 1) 140 to 150 degrees strike, 50 to 60 degrees southwest dip and 2) 40 to 45 degrees strike, 60 to 70 degrees northwest dip. Minor shears strike 170 to 175 degrees and dip 40 to 50 degrees west. Flow directions are thought to strike 150 to 160 degrees and dip 30 to 50 degrees northeast.

Mineralization consists of chalcopyrite and pyrite associated with carbonate-filled (and lesser quartz-carbonate filled) fractures. Malachite staining on the fractures is common. These veins are hosted in aphanitic andesites which contain up to 10 per cent disseminated pyrite and chalcopyrite (Assessment Report 14424). Silicification is associated with shear zones, quartz stringers and veinlets.

Small carbonate veins occur within 500 metres to the north of this occurrence. One of the best samples assayed 5.97 grams per tonne gold and 4.40 per cent copper (Assessment Report 14424).

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GSC MEM 251, p. 62
GSC MAP 962A
GCNL #74, 1964
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/30

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 004**

NATIONAL MINERAL INVENTORY: 094D9 Cu1,Cu5

NAME(S): **D.S.**, ARN, SIL,
Z

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 41 15 N
LONGITUDE: 126 27 43 W
ELEVATION: 1680 Metres

NORTHING: 6285479
EASTING: 655451

LOCATION ACCURACY: Within 500M
COMMENTS: Diamond drill hole ZD #1 (Assessment Report 5662).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Chalcocite	Chalcopyrite	Copper	Bornite	Cuprite
COMMENTS:	Possibly minor cuprite.				
ASSOCIATED:	Epidote	Magnetite			
ALTERATION:	Epidote	Zeolite	Malachite	Hematite	
ALTERATION TYPE:	Epidote		Zeolitic	Oxidation	
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	
Lower Jurassic	Hazelton	Telkwa	
Lower Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Lapilli Tuff
Porphyritic Flow
Pyroxene Porphyry Flow
Feldspar Porphyry Flow
Pyroclastic Rock
Quartz Diorite
Agglomerate
Breccia

HOSTROCK COMMENTS: Some of the pyroclastic rocks may belong to the Telkwa Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
COMMODITY

YEAR: 1975

Copper

GRADE
0.3400 Per cent

COMMENTS: A 3-metre drill intersection.
REFERENCE: Assessment Report 5662.

CAPSULE GEOLOGY

The D.S. occurrence, located on the 1975 ZD #1 diamond drill hole, is located west of the Ingenika River approximately 18 kilometres northwest of Johanson Lake.

The regional geology is similar to that of the Copper King occurrence (094D 149), located approximately 1 kilometre to the northwest.

Stratigraphically, the oldest rocks in the area are pyroxene porphyry flows overlain by bladed feldspar porphyry flows, both of the Upper Triassic Savage Mountain Formation (Takla Group). These are overlain by a mixed package of pyroclastics, possibly of the Lower Jurassic Telkwa Formation (Hazelton Group). The pyroclastics consist of a well-bedded waterlain sequence, agglomerates, breccias and lapilli tuffs (Assessment Report 5256). These successions are intruded by an unnamed Early Jurassic quartz diorite.

CAPSULE GEOLOGY

The flows are moderately fractured and jointed. Local faulting and shearing generally trends northeast and west.

The ZD #1 drill hole intercepted bladed feldspar porphyry and lapilli tuffs. Some of the lapilli tuffs are waterlain and exhibit graded bedding. The tuffs and porphyry flows contain disseminated hematite and magnetite in varying concentrations, up to an estimated 3 per cent. Epidote and zeolite commonly occur in fracture fillings and, where the rock is porphyritic, in amygdules.

Disseminated native copper and possibly minor cuprite occurs in bladed feldspar porphyry (Assessment Report 5662). In the tuffs, chalcocite and minor bornite are associated with an epidote-altered zone. A 3-metre drill interval, from this altered zone, assayed 0.34 per cent copper (Assessment Report 5662).

Surface mineralization occurs in numerous locations within 1 kilometre east of the drill hole. Mineralization consists of bornite, chalcocite and minor chalcopyrite in veinlets, fractures and shears. These mineralized structures occur in the pyroclastics, porphyritic flows and intrusives. The intrusive rocks are locally malachite-stained.

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GSC MAP 962A
GSC MEM 251, p. 62
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/01

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 005**

NATIONAL MINERAL INVENTORY: 094D15 Cu1

NAME(S): **MARMOT, THORNE, KMA,
 MENARD CREEK, NEW WELLINGTON, THOR-MARMOT**

STATUS: Prospect
 REGIONS: British Columbia
 NTS MAP: 094D15E
 BC MAP:
 LATITUDE: 56 45 27 N
 LONGITUDE: 126 35 17 W
 ELEVATION: 1900 Metres
 LOCATION ACCURACY: Within 500M
 COMMENTS: Centre of the major occurrence on Marmot Ridge (Assessment Report 17925).

MINING DIVISION: Omineca
 UTM ZONE: 09 (NAD 83)
 NORTHING: 6292989
 EASTING: 647455

COMMODITIES: Gold Copper Silver Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Bornite Pyrite Molybdenite
 ASSOCIATED: Quartz Calcite
 ALTERATION: Malachite Limonite Pyrite Calcite Silica
 ALTERATION TYPE: Oxidation Pyrite Silicific'n Carbonate
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated
 CLASSIFICATION: Hydrothermal Epigenetic Porphyry
 TYPE: D03 Volcanic redbed Cu L04 Porphyry Cu ± Mo ± Au
 COMMENTS: The shear zone, 1.5 metres wide, trends northwest (Assessment Report 17925).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Savage Mountain	
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Feldspar Porphyry
 Basaltic Andesite
 Aphanitic Volcanic
 Quartz Monzodiorite
 Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
 TERRANE: Stikine
 PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1948
 SAMPLE TYPE: Grab
 COMMODITY GRADE
 Silver 123.0900 Grams per tonne
 Gold 4.4600 Grams per tonne
 Copper 5.1800 Per cent
 COMMENTS: A sample of fissure vein material from the shear.
 REFERENCE: Geological Survey of Canada, Memoir 251, page 61.

CAPSULE GEOLOGY

The Marmot occurrence is located near the top of Marmot Ridge, on the eastern slope, at the headwaters of Menard Creek. The showing is located between two major north-northwest trending faults. The Moose Valley fault, to the west, separates Upper Cretaceous Tango Creek Formation (Sustut Group) sediments from Upper Triassic Takla Group volcanics. The Ingenika fault, to the east, cuts undivided Upper Triassic Takla Group volcanic rocks. Smaller faults, with the same trend, occur between these two faults. The area of the showing is underlain by Upper Triassic Savage Mountain Formation (Takla Group) augite porphyry, basalt flows, breccia, pillow breccia, tuff and interbedded bladed feldspar porphyry. A Jurassic quartz monzodiorite stock occurs to the east. Mineralization is hosted in bladed feldspar porphyry, basaltic andesite and aphanitic volcanic rocks that are, locally, fractured and jointed. Copper sulphides occur in fissure veins and

CAPSULE GEOLOGY

disseminated in volcanic rocks near the contact of the intrusion. Mineralization consists of chalcopyrite, malachite and limonite in a northwest trending silicified shear zone, 1.5 metres wide. A grab sample of fissure vein material from the shear zone assayed 4.46 grams per tonne gold, 5.18 per cent copper and 123.09 grams per tonne silver (Geological Survey of Canada Memoir 251, page 61). Other, similar, mineralized fissures have been found near this showing. Chalcocite, bornite, quartz and calcite are found filling small cracks and in basaltic andesites in the area. Abundant disseminated pyrite occurs near the quartz monzodiorite. San Telmo Resources Ltd. drilled in 1998. A 60.24-metre intersection graded 0.112 per cent copper and 0.041 grams per tonne gold (GCNL #146(July 30), 1998).

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EMR MP CORPFILE (New Wellington Mines Ltd.)
GSC MAP 962A
GSC MEM *251, p. 61
GSC OF 342
GSC P 74-1 Part A
GCNL #76(Apr.21), #146(July 30), 1998

DATE CODED: 1985/07/24
DATE REVISED: 1991/07/31

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 006**

NATIONAL MINERAL INVENTORY: 094D16 Au2

NAME(S): **GERLE GOLD, CENTENNIAL, MCCONNELL,**
MCCONNELL CREEK, LEGER GOLD, MAIN SHOWING

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094D16W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 52 35 N
LONGITUDE: 126 26 55 W
ELEVATION: 1725 Metres

NORTHING: 6306525
EASTING: 655480

LOCATION ACCURACY: Within 500M

COMMENTS: The occurrence is located on the 1947 Main showing which lies approximately 3 kilometres east of the lowermost of the McConnell lakes (Assessment Reports 9799, 12859, 19559).

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Pyrite Gold Chalcopyrite Galena
ASSOCIATED: Quartz Carbonate
ALTERATION: Epidote Silica
ALTERATION TYPE: Epidote Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Disseminated
CLASSIFICATION: Hydrothermal Igneous-contact Skarn
TYPE: I01 Au-quartz veins
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 850 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The Main showing has been traced over a 850 metre strike length.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Lay Range Assemblage
Upper Paleozoic			Jensen Peak Batholith
Lower Cretaceous			

LITHOLOGY: Amphibolite Gneiss
Chlorite Sericite Calcite Schist
Quartz Monzonite
Quartz Diorite
Pegmatite Dike
Quartz Monzodiorite
Monzodiorite
Ultramafic

HOSTROCK COMMENTS: The metamorphosed volcanics may belong to either the Takla Group or the Lay Range Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Amphibolite

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Drill Core
COMMODITY
Silver 13.7100 Grams per tonne
Gold 9.6000 Grams per tonne
COMMENTS: A 2.44-metre X-ray drillhole sample.
REFERENCE: Assessment Report 9799.

CAPSULE GEOLOGY

gneiss and quartz monzonite units. These zones are between a few centimetres to 12 metres in thickness and often host quartz carbonate veins. The schists are composed of chlorite, sericite and calcite with lesser quartz and plagioclase. The schist zones exhibit features of brittle-ductile shear zones and high bulk strain. The schistosity strikes between 155 and 175 degrees, dipping steeply northeast or southwest. Most of the quartz veins are parallel or sub-parallel to the walls of the schist zones.

Structures, including quartz veins, schist zones, foliation in the amphibolite and contacts, all trend approximately northwest with steep dips to the northeast or the southwest. Local faulting within the schist zones, trend sub-parallel to the general structure with a west-northwest strike.

Gold and silver mineralization is associated with sparse pyrite, chalcopyrite and galena in quartz-carbonate veins. The veins are hosted in steeply dipping carbonate-chlorite-sericite schist zones developed within the amphibolite gneiss unit. The Main showing is traceable over a strike length of 850 metres and quartz-carbonate veins occur discontinuously for a total strike length of 9 kilometres. From the plotted location, this style of mineralization extends for 2 kilometres to the southeast and 7 kilometres to the northwest.

Gold and copper mineralization associated with pyrite and lesser chalcopyrite also occurs within non-schistose amphibolite gneiss. Mineralization occurs in zones of increased epidotization or silicification.

Free gold has been obtained from quartz vein material and grades of up to 151.19 grams per tonne gold over 0.6 metre have been reported from surface samples (Assessment Report 12859). A 2.44-metre interval from a drill hole assayed 13.71 grams per tonne silver and 9.60 grams per tonne gold (Assessment Report 9799).

Indicated reserves are 45,355 tonnes grading 7.5 grams per tonne gold (Gerle Gold Ltd., Report to Shareholders, May 1987).

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GSC OF 342
GSC P 76-29
GSC (in press) Geology of Canada Number 4
GCNL #62,#125,#152,1983; #54,#146,#165,#200, 1984; #69,#133,#184,#240, 1985
INT PROS & DEV MAG Aug/Sept 1983; Aug/Sept 1984; Nov/Dec 1985
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WWW <http://www.infomine.com/>
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Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1992/05/08

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 007**

NATIONAL MINERAL INVENTORY: 094D16 Au4

NAME(S): **MCCONNELL CREEK**, DAHL, JENSEN

STATUS: Past Producer Open Pit

MINING DIVISION: Omineca

REGIONS: British Columbia

NTS MAP: 094D16W

BC MAP:

LATITUDE: 56 50 59 N

LONGITUDE: 126 28 47 W

ELEVATION: 1210 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The McConnell Creek placer occurrence is located within one of the original placer leases (C.L. 479) held by P. Jensen (Property File - Unpublished anonymous sketch map of placer leases along McConnell Creek, unknown year).

UTM ZONE: 09 (NAD 83)

NORTHING: 6303475

EASTING: 653701

COMMODITIES: Gold Platinum

MINERALS

SIGNIFICANT: Gold Platinum

ASSOCIATED: Mercury Silver

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated

CLASSIFICATION: Placer

TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Quaternary

GROUP

Undefined Group

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Gravel

Sand

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

Overlap Assemblage

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The McConnell Creek placer occurrence, located on one of the original placer leases held by P. Jensen, lies near the confluence of the Jensen and McConnell creeks. The occurrence includes all the placer workings along the 9 kilometre length of the creek. These placer occurrences were discovered in 1899 and have been worked intermittently since then.

The regional geology is similar to that of the Gerle Gold occurrence (094D 006) located approximately 3 kilometres to the east.

Widespread placer gold, with minor platinum, occurs within the sands and gravels along the entire length of McConnell Creek. Most of the placer mining has been done on the gravel benches (the Jensen and Dahl benches) that border the creek. These benches occur from 3 kilometres upstream of the Ingenika River confluence to the lowermost of the McConnell lakes (Geological Survey of Canada Memoir 251). The auriferous sands and gravels are underlain by a layer of concretionary silt, probably formed by an old Tertiary lake (Property File - Holbrooke, G. L., 1960).

The gravels are crossbedded and poorly sorted, commonly a mixture of well-rounded boulders, cobbles, pebbles and sand interspersed with layers and lenses of sand. The gold is erratically distributed in various layers from the surface down to the silt layer. The depth from the surface to the silt layer is uncertain, but has been reported to be 42 metres.

The gold occurs as small, rounded grains or as flattened nuggets. The gold is accompanied by small amounts of flake platinum and abundant black sand. An alloy of silver and mercury was also recovered from these gravels.

In the period from 1931 to 1941, production is recorded as 37,708 grams (1100 ounces) of gold (National Mineral Inventory - 094D/16 Aul). There is no record of the amount of gold removed from the creek prior to 1931.

During 1965, Columbia Placers Ltd. churn drilled 42 holes to test the Jensen and Dahl benches. The drilling indicated that most of the gold lies in the upper few feet and the deeper gravels are essentially barren.

CAPSULE GEOLOGY

The Dahl bench contains an indicated 152 910 cubic metres at 0.666 grams per cubic metre (\$.8056 per cubic metre based on the 1965 gold price of \$1.21 per gram) and the Jensen bench contains an indicated 229 366.5 cubic metres at 0.465 grams per cubic metre (\$.5624 per cubic metre at \$1.21 per gram) (National Mineral Inventory - 094D/16 Au1).

BIBLIOGRAPHY

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EM GEOFILE 2000-2; 2000-5
EM OF 2001-01
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EMPR BULL 2, 28 pp. 43-45
EMPR PF (Wells, J.H. (1949): Report on a reconnaissance survey of the McConnell Creek Placers; *Holbrooke, G.L. (1960): Report on McConnell Creek Property; Holbrooke, G.L. (1965): Maps and plan of McConnell Creek Property; *Unpublished anonymous sketch map of placer leases along McConnell Creek, unknown year)
EMR MP CORPFILE (Columbia Placers Ltd.)
GSC MAP 962A
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GSC OF 342
GSC P 76-29
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1992/05/13

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 008**

NATIONAL MINERAL INVENTORY: 094D16 Au3

NAME(S): **INGENIKA RIVER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 49 04 N
LONGITUDE: 126 24 05 W
ELEVATION: 1175 Metres

NORTHING: 6300113
EASTING: 658609

LOCATION ACCURACY: Within 500M

COMMENTS: The Ingenika River occurrence is located approximately 1.2 kilometres below the mouth of McConnell Creek, on the Ingenika River (Minister of Mines Annual Report 1908).

COMMODITIES: Gold Platinum

MINERALS

SIGNIFICANT: Gold Platinum
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Quaternary	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Gravel
Sand
Granite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Ingenika River placer occurrence is located approximately 1.2 kilometres below the mouth of McConnell Creek. This occurrence is similar to the McConnell Creek placer occurrence (094D 007).

Placer gold occurs in pockets, formed in the granitic host rock, between 0.3 to 2.44-metres in depth. These pockets are filled with gold and platinum bearing gravels and sands. The gold is very fine, flattened and occurs with an appreciable amount of platinum.

To the end of 1950, production is officially recorded as 2400 grams (70 ounces) of gold (National Mineral Inventory 094D16 Au3).

Another placer gold deposit occurs directly across from the mouth of McConnell Creek. This deposit is reported to contain a quantity of fine gold in shallow surface diggings (Minister of Mines Annual Report 1908, page 82).

BIBLIOGRAPHY

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EMPR AR *1908-82,83,84
EMPR BULL 28, p. 43
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/05/15

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 009**

NATIONAL MINERAL INVENTORY: 094D9 Au5

NAME(S): **WREDE CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 43 38 N
LONGITUDE: 126 16 42 W
ELEVATION: 1540 Metres

NORTHING: 6290330
EASTING: 666518

LOCATION ACCURACY: Within 500M

COMMENTS: Located near the headwaters of Wrede Creek approximately 5 kilometres south of Fleet Peak (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au
I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Fleet Peak Pluton

LITHOLOGY: Greenstone
Quartz Monzodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1948
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 7.3700 Grams per tonne
Gold 2.5700 Grams per tonne
REFERENCE: Geological Survey of Canada Memoir 251, page 59.

CAPSULE GEOLOGY

The Wrede Creek occurrence is located near the headwaters of Wrede Creek, approximately 5 kilometres south of Fleet Peak. The regional geology is similar to that of the Shred occurrence (094D 111). Locally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group sediments. Foliated quartz monzodiorite of the Early Jurassic Fleet Peak pluton, lies to the east. Takla Group volcanics occur to the west and are bounded by the north-northwest trending Ingenika fault. Mineralization occurs in a pyritic quartz vein approximately 45 centimetres in width (Geological Survey of Canada, Memoir 251, page 59). The vein strikes north and cuts through rusty, pyritic greenstones. A grab sample assayed 2.57 grams per tonne gold and 7.37 grams per tonne silver (Geological Survey of Canada, Memoir 251, page 59).

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GSC MEM *251, p. 59
GSC MAP 962A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 294
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GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/13

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 010**

NATIONAL MINERAL INVENTORY: 094D9 Au3

NAME(S): **QUYZVHX**, SOLOMON, SHEBA,
SHANGRI-LA, INGE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:
LATITUDE: 56 40 08 N
LONGITUDE: 126 14 32 W
ELEVATION: 1680 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Quyzvhx vein (Assessment Report 14630).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6283928
EASTING: 668988

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Arsenopyrite Galena Bornite
ASSOCIATED: Quartz Carbonate Calcite
ALTERATION: Malachite Uralite Chlorite Silica Clay
Sericite Epidote
ALTERATION TYPE: Oxidation Silicific'n Sericitic Epidote Chloritic
Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Disseminated Concordant
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au
I01 Au-quartz veins
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 30 x 1 Metres STRIKE/DIP: 116/90 TREND/PLUNGE:
COMMENTS: Strike and dip of the shear zone containing the Solomon vein, which is up to 1 metre wide and has been exposed for 30 metres (Assessment Report 14630).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Porphyritic Andesite
Altered Andesitic Tuff
Altered Andesitic Flow
Argillite
Lapilli Tuff
Homblende Diorite
Homblende Biotite Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 68.5710 Grams per tonne
Gold 107.6570 Grams per tonne
COMMENTS: A 15-centimetre chip sample from the Solomon vein that also contains an estimated 10 per cent galena and 5 per cent chalcopyrite.
REFERENCE: Assessment Report 14630.

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1985

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

9.7000

Grams per tonne

Gold

0.1880

Grams per tonne

COMMENTS: A grab sample from the Quyzvvh vein.
REFERENCE: Assessment Report 14630.

CAPSULE GEOLOGY

The Quyzvvh occurrence, comprising the Quyzvvh and Solomon veins, is located near the headwaters of Wrede Creek about 9 kilometres north-northwest of Johanson Lake. The Solomon vein is approximately 450 metres to the north-northwest of the Quyzvvh vein.

Regionally, the area lies within the Quesnel Terrane. Quesnellia rocks comprise a volcanic and sedimentary assemblage assigned to the Middle Triassic to Lower Jurassic Takla Group, and a poorly defined sedimentary and volcanic suite belonging to the Pennsylvanian to Permian Lay Range assemblage. The Lay Range assemblage is believed to be part of the Harper Ranch subterrane (Geological Survey of Canada, Geology of Canada (in press), Number 4). These rocks are intruded by Early Jurassic monzodiorites, Early Cretaceous quartz monzodiorites and Late Triassic Alaskan-type ultramafics.

This package of sediments, volcanics and intrusions is bounded to the east by the north-northwest trending Swannell fault and to the west by the north-northwest trending Ingenika fault. The Swannell fault separates the Quesnel Terrane from the para-autochthonous Cassiar Terrane, represented by Upper Proterozoic rocks assigned to the Ingenika Group. The Ingenika fault separates the Quesnel Terrane from the Stikine Terrane, which is an aggregate of allochthonous Paleozoic and Mesozoic magmatic arc assemblages and overlying sedimentary sequences (Monger, 1984).

Locally, the Takla Group is represented by felsic to intermediate volcanics and clastic sedimentary rocks. The fragmental volcanics are the most prevalent. In order of abundance, the rock types are: andesitic tuffs, lapilli tuffs, agglomerates and flows (Assessment Report 14630). The sedimentary rocks are predominantly dark grey to black argillites intercalated with the volcanics. The sedimentary strata generally strikes east-west and dips approximately 30 degrees to the north (Assessment Report 14630). The rocks are intruded by hornblende diorite and hornblende biotite diorite dykes and sills, which are 0.5 to 8 metres thick (Assessment Report 14630).

Shearing has developed near the contacts of the intrusives with the sedimentary and volcanic rocks. Alteration haloes are relatively thin, typically extending 1 metre from the intrusive contacts (Assessment Report 14630). An alteration zonation is present, the rocks near the intrusives are clay and silica altered and further from the intrusives, the rocks exhibit chlorite and epidote alteration (Assessment Report 14630). Alteration within the intrusive is primarily uralitization and chloritization of the mafic minerals with lesser sericite and epidote alteration (Assessment Report 14630).

Mineralization occurs in quartz and quartz-carbonate veins within sheared volcanics and sediments, along sheared intrusive contacts, in gossan zones developed at sedimentary and volcanic contacts and in calcite veins and stringers in the sediments (Assessment Report 14630). Sulphide mineralization is predominantly chalcopyrite with associated pyrite. The quartz and quartz-carbonate veins also contain galena, arsenopyrite and bornite. Calcite veins and stringers within the sediments are commonly malachite stained.

The Quyzvvh vein is a 0.5-metre quartz vein in a 10-metre shear zone, cutting a porphyritic andesite (Assessment Report 14630). The shear zone strikes 110 degrees and dips between 75 to 85 degrees south. Disseminated chalcopyrite and pyrite are found in the quartz vein and in lenses up to 25 metres in length (Assessment Report 14630). The vein narrows and becomes covered by overburden at both ends. A grab sample, of vuggy quartz with rusty fractures containing fine-grained chalcopyrite and malachite, assayed 9.7 grams per tonne silver and 0.188 grams per tonne gold (Assessment Report 14630). A similar vein (the Sheba vein) is located approximately 500 metres to the east and may be the extension of the Quyzvvh vein (Assessment Report 21358).

The Solomon vein, a 0.1 to 1-metre wide white quartz vein, is exposed for 30 metres. The vein occurs in a shear zone which strikes 116 degrees and dips vertically (Assessment Report 14630). The shear zone cuts andesitic tuffs and flows with intercalated argillite beds.

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RUN TIME: 11:51:27

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PAGE: 297
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CAPSULE GEOLOGY

The rocks near this zone are phyllitic, schistose and silicified. Mineralization consists of chalcopyrite, galena and pyrite. A chip sample over 15 centimetres assayed 107.657 grams per tonne gold, 68.571 grams per tonne silver and an estimated 10 per cent galena and 5 per cent chalcopyrite (Assessment Report 14630).

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GSC OF 342
GSC P 76-29
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255-278.

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/27

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 010**

MINFILE NUMBER: **094D 011**

NATIONAL MINERAL INVENTORY: 094D9 Cu6,Cu2

NAME(S): **ARJAY**, SUSTUT LAKE, ARJAY 1-20

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 34 37 N
LONGITUDE: 126 24 57 W
ELEVATION: 1860 Metres

NORTHING: 6273284
EASTING: 658738

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 3 kilometres north of the southeast end of Sustut Lake (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Gold Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Copper Pyrite

Tetrahedrite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Disseminated Stratiform
CLASSIFICATION: Hydrothermal Epigenetic Replacement
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au
I01 Au-quartz veins

SHAPE: Tabular

MODIFIER: Sheared

STRIKE/DIP: 085/70N TREND/PLUNGE:

COMMENTS: The veins typically strike 85 degrees and dip 70 degrees to the north (Assessment Report 475).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	
Lower Jurassic			Asitka Peak Stock

LITHOLOGY: Tuff
Chloritic Tuff
Intermediate Porphyritic Flow
Serpentinite
Quartz Diorite
Epiclastic Sediment/Sedimentary
Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1962

SAMPLE TYPE: Chip

COMMODITY

GRADE

Silver

27.4300

Grams per tonne

Copper

3.8000

Per cent

COMMENTS: A sample across a 2.13-metre quartz vein.

REFERENCE: Assessment Report 475.

CAPSULE GEOLOGY

The Arjay occurrence is located approximately 3 kilometres north of Sustut Lake.

Regionally, the area lies within the Stikine Terrane. The Stikine Terrane is an aggregate of allochthonous Paleozoic to Mesozoic magmatic arc assemblages and overlying sedimentary sequences (Monger, 1984). Volcano-sedimentary arc successions of the Permian Asitka Group and the Upper Triassic Takla Group are considered basement in the area. The overlying volcanic and sedimentary sequences belong to the Lower to Middle Jurassic Hazelton Group. Coarse clastic rocks of the Middle to Upper Jurassic Bowser Lake Group unconformably overlie the arc assemblages. The Bowser Lake

CAPSULE GEOLOGY

Group is unconformably overlain by a continental clastic sequence, the Upper Cretaceous to Eocene Sustut Group.

The area lies west of the north-northwest trending Ingenika-Findlay fault, which separates the Stikine and Quesnel terranes. The area is bounded, to the east, by the north-northwest trending Moose Valley fault. Further west of the Moose Valley fault, the area is cut by numerous crosscutting thrust and normal faults. These strike northwest and northeast. The stratified rocks have undergone regional greenschist metamorphism and are cut by ultramafic to intermediate intrusives of Late Triassic to Cretaceous age.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). The formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates and minor intercalated epiclastic sediments. The stratified rocks are intruded by the Early Jurassic Asitka Peak quartz diorite stock. Serpentinite has been mapped in the area.

Mineralization consists of native copper hosted in serpentinite and red volcanics.

Approximately 250 metres to the northeast, mineralization consists of chalcopyrite, bornite and chalcocite with associated pyrite and occasional tetrahedrite. These occur disseminated in shear zones and as replacements in favourable tuff horizons (Assessment Report 475). A sample across a 2.13-metre quartz vein, assayed 3.80 per cent copper and 27.43 grams per tonne silver (Assessment Report 475). The sampled vein is one of four parallel veins, which strike 85 degrees and dip 70 degrees to the north.

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DATE CODED: 1985/07/24
DATE REVISED: 1992/03/19

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 012**

NATIONAL MINERAL INVENTORY: 094D9 Au4

NAME(S): **SOLO**, F-K VEINS

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 32 12 N
LONGITUDE: 126 14 56 W
ELEVATION: 1735 Metres

NORTHING: 6269201
EASTING: 669170

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the I, J and K-veins (Assessment Report 21394).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz

MINERALIZATION AGE: Triassic-Jurassic

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Mesothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au
I01 Au-quartz veins

DIMENSION: 400 Metres STRIKE/DIP: TREND/PLUNGE:

COMMENTS: The age of mineralization is probably similar to that of the Bruce occurrence (094D 013). The dimension given is for the F-vein along strike.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Lower Jurassic			

LITHOLOGY: Diorite
Quartz Diorite
Hornfels
Andesite
Basalt
Tuff
Volcaniclastic

HOSTROCK COMMENTS: The stock is informally named the Goldway stock (Assessment Report 21394).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

METAMORPHIC TYPE: Regional Contact RELATIONSHIP: Syn-mineralization GRADE: Greenschist Hornfels

COMMENTS: The shearing and intrusive relationships suggest syn-mineralization.

INVENTORY

ORE ZONE: VEIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY Gold GRADE 16.1100 Grams per tonne

COMMENTS: A sample from a rusty zone on the I vein.
REFERENCE: Assessment Report 21394.

CAPSULE GEOLOGY

The Solo occurrence is located 8 kilometres southwest of Johanson Lake and about 2 kilometres northeast of Goldway Peak. A small lake, informally named Solo Lake, is located at the headwaters of Solo Creek, less than 1 kilometre east of the occurrence. The occurrence consists of a number of veins, named the F to K veins (Assessment Report 21394).

Regionally, the area lies within the Quesnel Terrane. The region is underlain mainly by submarine basaltic and andesitic island-arc volcanics and sediments of the Upper Triassic to Lower Jurassic Takla Group (Assessment Report 21394). These stratified rocks have undergone regional greenschist metamorphism and are cut by

CAPSULE GEOLOGY

ultramafic to intermediate intrusives of Late Triassic to Cretaceous age (Assessment Report 21394). The area is bounded to the west by the north-trending Findlay-Ingenika fault, which separates Stikinia from Quesnellia. The north trending Dortatelle fault occurs to the east. Related shears and faults cut the intrusive and stratified rocks. The dominant trend direction is north and subordinate shears and faults trend west (Assessment Report 21394).

Locally, the area is underlain mainly by feldspar, augite and/or hornblende phyric andesites and basalts, tuffs, lapilli tuffs, volcanoclastic siltstones, sandstones and argillites. These rocks are intruded by the Goldway stock, an Early Jurassic intrusive complex (Assessment Report 21394). The complex ranges in composition from hornblende to granodiorite, but is predominantly fine to medium-grained diorite to quartz diorite. The volcanics and sediments at the typically sharp contact have been hornfelsed (Assessment Report 21394). Deformation consists of brittle and ductile shearing and faulting, predominantly trending northwest. Fault zones occur near the northeast and southern contact zones of the intrusive. Large en echelon tension gashes are formed within these shear zones.

Mineralization consists of gold and silver associated with minor pyrite in quartz veins and stockworks. These veins appear to be structurally controlled and trend northwest. The apparent age of mineralization is the same as the faulting, Upper Triassic to Lower Jurassic (Assessment Report 21394).

The F through K veins are associated with shearing at or near the north contact of the intrusive. These veins are part of a northwest trending vein system. The distance from the southeast F vein to the northwest K vein, is approximately 1.5 kilometres along strike.

The F vein, found in 1985, is located near the southwest shore of Solo Lake (Assessment Report 14105). This white quartz vein is traceable for 400 metres. One of the best samples assayed 4.1 grams per tonne gold (Assessment Report 21394).

The G vein, a 2-metre wide quartz vein, is irregularly traceable for up to 100 metres. It cuts the intrusive and hornfelsed volcanics, trending north-northwest. Pyrite is sporadically distributed throughout the length of the vein. Grab samples from this vein assayed low gold values (Assessment Report 21394).

The H vein is a north-trending quartz stockwork system cutting through both the intrusives and the hornfels. The milky white quartz contains little or no sulphides. A grab sample from the south end of this system assayed 0.62 grams per tonne gold (Assessment Report 21394).

The I vein is a milky white quartz vein, up to 2-metres thick and traceable for greater than 100 metres. It strikes north-northwest and dips steeply to the west. The vein contains rusty patches from the presence of pyrite. A grab sample from a rusty zone assayed 16.11 grams per tonne gold (Assessment Report 21394).

The J vein is similar to the I-vein and a float sample from the vein assayed 0.70 grams per tonne gold (Assessment Report 21394).

The K vein is comprised of two quartz pods, which have been trenched. These milky white quartz veins are traceable for 10 metres and contain locally abundant pyrite. One of the best grab samples assayed 4.66 grams per tonne gold (Assessment Report 21394).

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- EMPR AR 1926-135; 1947-107,108
- EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
- GSC MEM 251, p. 59
- GSC MAP 962A
- GSC OF 342
- GSC P 76-29
- EMR MP CORPFILE (Springer Sturgeon Gold Mines Ltd.)

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/09

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 013**

NATIONAL MINERAL INVENTORY: 094D9 Au2

NAME(S): **BRUCE** A-VEIN, BRUCE 1-17

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 29 N
LONGITUDE: 126 14 35 W
ELEVATION: 1865 Metres

NORTHING: 6267886
EASTING: 669582

LOCATION ACCURACY: Within 500M

COMMENTS: The A-vein (Assessment Report 21394).

COMMODITIES: Gold Silver Lead

MINERALS

SIGNIFICANT: Gold Galena Pyrite

ASSOCIATED: Quartz

MINERALIZATION AGE: Triassic-Jurassic

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Mesothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au
I01 Au-quartz veins

SHAPE: Tabular

MODIFIER: Sheared Faulted

DIMENSION: 100 x 100 x 1 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: The A-vein is traceable for 100 metres vertically and horizontally and attains a width of 1 metre.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Diorite
Quartz Diorite
Hornblendite
Granodiorite
Andesite
Basalt
Tuff
Volcaniclastic

HOSTROCK COMMENTS: The stock is informally named the Goldway stock (Assessment Report 21394).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Quesnel

METAMORPHIC TYPE: Regional Contact

RELATIONSHIP: Syn-mineralization

GRADE: Greenschist
Hornfels

COMMENTS: The shearing and intrusive relationships suggest syn-mineralization.

INVENTORY

ORE ZONE: C VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Chip

COMMODITY

GRADE

Gold

35.6570

Grams per tonne

COMMENTS: A 1947 chip sample over 0.4 metres.

REFERENCE: Assessment Report 21394.

ORE ZONE: A VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Channel

COMMODITY

GRADE

Silver

96.0000

Grams per tonne

Gold

68.5000

Grams per tonne

COMMENTS: A channel sample over 0.20 metres.

REFERENCE: Assessment Report 21394.

CAPSULE GEOLOGY

The Bruce occurrence is located 8 kilometres southwest of Johanson Lake and approximately 2 kilometres east of Goldway Peak. A small lake, informally named Solo Lake, is located at the headwaters of Solo Creek and is approximately 1 kilometre northeast of the occurrence. The occurrence, comprising the A through E veins, is located on the A vein which is the most significant (Ministry of Mines Annual Report 1947, pages 105-108).

Regionally, the area lies within the Quesnel Terrane and is underlain by mainly submarine basaltic and andesitic island-arc volcanics and sediments of the Upper Triassic to Lower Jurassic Takla Group (Assessment Report 21394). These stratified rocks have undergone regional greenschist metamorphism and are cut by ultramafic to intermediate intrusions of Upper Triassic to Cretaceous age (Assessment Report 21394).

The area is bounded to the west by the north-trending Findlay-Ingenika fault, which separates Stikinia from Quesnellia. The north-trending Dortatelle fault occurs to the east. Related shears and faults cut both the intrusives and stratified rocks. The dominant direction of shearing is north and subordinate shears and faults trend west (Assessment Report 21394).

Locally, the area is underlain by mainly feldspar, augite and/or hornblende phyric andesites and basalts, tuffs, lapilli tuffs, volcanoclastic siltstones, sandstones and argillites. These rocks have been regionally metamorphosed and are intruded by the Goldway stock, an Early Jurassic intrusive complex (Assessment Report 21394). This complex ranges in composition from hornblende to granodiorite, but is predominantly fine to medium-grained diorite to quartz diorite. The volcanics and sediments at the typically sharp contact are hornfelsed (Assessment Report 21394).

The rocks have been deformed by both brittle and ductile shearing and faulting, trending predominantly northwest. Fault zones occur near the northeast and southern contact zones of the intrusive. Large en echelon tension gashes are formed within these shear zones.

Gold and silver are associated with minor pyrite in quartz veins and stockworks. These veins appear to be structurally controlled and trend northwest. The apparent age of mineralization is Upper Triassic to Lower Jurassic, based on the timing of the faulting.

The A through E veins are associated with shearing at or near the southern contact of the intrusion. These veins are part of a northwest-trending vein system. The distance from the southeast A vein to the northwest E vein is approximately 1 kilometre along strike.

The A vein is the most significant and best mineralized vein in the group. This white quartz vein, striking north to northwest and dipping steeply west, varies in width from a few centimetres to 1 metre where exposed. It is traceable for approximately 100 metres along strike and 100 metres vertically (Assessment Report 21394). The vein appears to pinch out near the ridge crest to the north and disappears under overburden to the south. Visible gold has been noted in three locations with reported gold values up to 68.5 grams per tonne (1.998 ounces per ton) and 96.0 grams per tonne silver (from a channel sample over 0.2 metre) (Assessment Report 21394). The best gold values appear to be associated with galena and pyrite in the hanging wall portions of the vein.

The B vein is a northwest striking, 150 metre elongate lens of milky white quartz. The vein, containing little or no sulphides or gold values, is up to 10 metres wide and pinches out at both ends.

The C vein is traceable for 40 metres, averages 45 centimetres in width and contains visible gold. It also pinches out at both ends. One of the best samples assayed 35.657 grams per tonne gold.

The D vein is traceable for more than 200 metres and is between 1 to 3 metres in width. The vein occurs as a series of en echelon lenses striking about 140 degrees and dipping 70 degrees to the north. The best sample assayed 8.9 grams per tonne gold (Assessment Report 21394).

The E vein is also an en echelon series of quartz lenses ranging in width from a few centimetres to 1 metre. No significant precious metal values have been obtained from this vein.

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- EMPR AR 1947-106-108
- EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
- GSC MEM 251, p. 259
- GSC MAP 962A
- GSC P 76-29

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 304
REPORT: RGEN0100

BIBLIOGRAPHY

GSC OF 342

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/05

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 014**

NATIONAL MINERAL INVENTORY: 094D9 Au1

NAME(S): **GINGER B**, GINGER B 10-39, GINGER 1-9

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 30 26 N
LONGITUDE: 126 09 37 W
ELEVATION: 1900 Metres

NORTHING: 6266147
EASTING: 674753

LOCATION ACCURACY: Within 1 KM

COMMENTS: The location is from Geological Survey of Canada Map 962A (Memoir 251).

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au

I01 Au-quartz veins

DIMENSION:

STRIKE/DIP: 155/80W

TREND/PLUNGE:

COMMENTS: Strike and dip of the vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY:

Tuff
Breccia
Porphyritic Hornblende Andesite
Limy Slate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1948

SAMPLE TYPE: Channel

COMMODITY

Gold

GRADE

23.0000

Grams per tonne

COMMENTS: The channel sample is across 0.43 metre.

REFERENCE: Geological Survey of Canada, Memoir 251, page 60.

CAPSULE GEOLOGY

The Ginger B occurrence is located approximately 5.5 kilometres south of Darb Lake (Geological Survey of Canada Memoir 251).

Regionally, the area is underlain by a northwest trending assemblage of Upper Triassic Takla Group volcanics and sediments. The Takla Group rocks are intruded by the Early Jurassic Hogem batholith, to the south. To the east, the rocks are intruded by leucocratic granodiorite of the Early Cretaceous Kliyul Creek body. To the north, the volcanics are intruded by quartz diorite of the Early Jurassic Darb Lake stock. The major structure in this area is the north trending Dortatelle fault. Smaller faults trend northwest.

Locally, the area is underlain predominantly by dark green tuffs with intercalated breccias and porphyritic (hornblende) andesites. A few thin beds of limy slates, containing poorly preserved fossils, are intercalated with the volcanics. The rocks generally strike north and dip approximately 45 degrees to the west.

The showing consists of mineralized quartz veins containing pyrite and occasional grains of chalcopyrite and galena. One quartz vein, striking 155 degrees and dipping 80 degrees west, is 0.9 metre thick and has been exposed for 21 metres. A 0.5-metre channel sample from this vein assayed 21.94 grams per tonne gold. Another channel sample, taken 6 metres away, assayed 23.0 grams per tonne gold across

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RUN TIME: 11:51:27

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CAPSULE GEOLOGY

0.43 metre (Geological Survey of Canada Memoir 251).

BIBLIOGRAPHY

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GSC MEM *251, p. 60
GSC MAP *962A
GSC OF 342
GSC P 76-29
EMR MP CORPFILE (Springer Sturgeon Gold Mines Ltd.)

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/20

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 015**

NATIONAL MINERAL INVENTORY: 094D8 Cu1,Au1

NAME(S): **CROY**, SHELL, CROY 1-17

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 28 52 N
LONGITUDE: 126 02 42 W
ELEVATION: 1650 Metres

NORTHING: 6263542
EASTING: 681969

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization (Assessment Report 2862).

COMMODITIES: Gold Copper Silver Molybdenum Zinc
 Lead

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Magnetite Pyrrhotite Galena
 Sphalerite Molybdenite
ASSOCIATED: Quartz Calcite Chlorite
ALTERATION: Chlorite Carbonate Quartz
ALTERATION TYPE: Chloritic Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Massive Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au
 I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Volcanic Flow
Breccia
Tuff
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: 2

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Silver	78.5100	Grams per tonne
Gold	42.0680	Grams per tonne
Copper	20.3000	Per cent

REFERENCE: Property File - Pacific Rim Mining Corp., Prospectus, 1988.

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY	GRADE	
Silver	5.2000	Grams per tonne
Gold	2.0000	Grams per tonne

COMMENTS: From a pyritic milky quartz vein, about 800 metres to the southwest.

REFERENCE: Assessment Report 21521.

CAPSULE GEOLOGY

The Croy occurrence is located on the northeast slope of a ridge separating Croydon and Kliyul creeks, approximately 17 kilometres east-northeast of Dortatelle Peak (Assessment Report 2862).

Regionally, the area is underlain by a northwest-trending assemblage of Middle Triassic to Lower Jurassic Takla Group volcanics and sediments. The Takla Group rocks are intruded by the Early Jurassic Hogem batholith, to the south. To the east, the rocks are intruded by leucocratic granodiorite of the Early Cretaceous Kliyul Creek body. Three northwest-trending, elongate, Alaskan-type, Late

CAPSULE GEOLOGY

Triassic ultramafic bodies also occur in the general area.

Locally, the property is underlain by gently folded volcanic flows, breccias and thin bedded tuffs intruded by feldspar porphyry dykes. The major structure in this area is the north trending Dortatelle fault. Smaller faults trend northwest.

Mineralization occurs in north-northwest trending sulphide-rich shear zones and in veins. The zones, cutting the volcanics at angles, appear to be related to the acidic feldspar porphyry dykes (Property File - Pacific Rim Mining Corp., Prospectus, 1988). Six mineralized zones have been identified and are commonly offset by north-northeast cross faults.

The mineralization is massive to disseminated and consists of chalcopyrite, pyrite, magnetite and pyrrhotite with lesser amounts of galena, sphalerite and molybdenite. The shear zones also contain quartz, calcite and chlorite. Within the quartz-carbonate veins, mineralization consists primarily of chalcopyrite with associated pyrite and pyrrhotite.

A grab sample from Zone 2 assayed 42.068 grams per tonne gold, 78.51 grams per tonne silver and 20.30 per cent copper (Property File - Pacific Rim Mining Corp., Prospectus, 1988).

Similar veins and fractures occur approximately 800 metres to the southwest. A grab sample from a pyritic, milky, quartz vein assayed 2.0 grams per tonne gold and 5.2 grams per tonne silver (Assessment Report 21521). Numerous chalcopyrite showings occur over the 800 metres.

BIBLIOGRAPHY

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EMPR ASS RPT 2862, *21521
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EMPR PF (In 094D General - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973; *Pacific Rim Mining Corp., Prospectus, Nov. 14, 1988)
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GSC MAP 962A, 1030A
GSC MEM 251, p. 60; 274, p. 212
GSC OF 342
GSC P 76-29
Chevron File
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1996/08/28

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094D 016**

NATIONAL MINERAL INVENTORY: 094D7 Zn1

NAME(S): **WILLOW CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 25 00 N
LONGITUDE: 126 35 44 W
ELEVATION: 1680 Metres

NORTHING: 6255048
EASTING: 648326

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization at the headwaters of Willow Creek (Assessment Report 4855).

COMMODITIES: Zinc Copper Lead Silver Gold

MINERALS

SIGNIFICANT: Sphalerite Chalcopyrite Galena

ASSOCIATED: Calcite Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

SHAPE: Tabular

MODIFIER: Fractured

DIMENSION: STRIKE/DIP: 075/80S

TREND/PLUNGE:

COMMENTS: Strike of a mineralized vein (Geological Survey of Canada, Memoir 251).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Dewar

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Andesitic Tuff
Tuffaceous Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1948

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	5.6600	Grams per tonne
Gold	0.0900	Grams per tonne
Copper	0.0600	Per cent
Lead	0.0200	Per cent
Zinc	9.9500	Per cent

COMMENTS: A selected sample of vein material.

REFERENCE: Geological Survey of Canada, Memoir 251, page 63.

CAPSULE GEOLOGY

The Willow Creek occurrence is located at the headwaters of Willow Creek (Assessment Report 4855).

The regional geology is similar to that of the Tie occurrence (094D 089).

The showing is located on the south limb of a westward trending anticline. This fold occurs entirely within the Upper Triassic Dewar Formation (Takla Group). The host rocks are andesitic tuffs and tuffaceous argillites, generally striking 165 degrees and dipping 20 degrees to the west.

Mineralization consists of sphalerite, chalcopyrite and galena hosted in several calcite and quartz veins. A 0.3-metre wide vein (traceable for approximately 91 metres) strikes 165 degrees and dips 80 degrees to the south. Locally, this vein contains up to 20 per cent sulphides (Geological Survey of Canada Memoir 251, page 63). No mineralization was observed in the country rocks.

A selected sample assayed 0.09 gram per tonne gold, 5.66 grams per tonne silver, 0.06 per cent copper, 0.02 per cent lead, and 9.95

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CAPSULE GEOLOGY

per cent zinc (Geological Survey of Canada Memoir 251).

BIBLIOGRAPHY

EMPR ASS RPT *4895, 4921, 5402
EMPR FIELDWORK 2000, pp. 75-82
GSC MAP 962A
GSC MEM *251, p. 63
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/09

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 017**

NATIONAL MINERAL INVENTORY: 094D7 Zn2

NAME(S): **ASITKA RIVER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 20 53 N
LONGITUDE: 126 30 38 W
ELEVATION: 2000 Metres

NORTHING: 6247601
EASTING: 653844

LOCATION ACCURACY: Within 1 KM

COMMENTS: The location is plotted from the Geological Survey of Canada Map 962A (Memoir 251).

COMMODITIES: Zinc Copper Silver

MINERALS

SIGNIFICANT: Sphalerite Chalcopyrite
ASSOCIATED: Calcite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Dewar	

LITHOLOGY: Sandstone
Argillite
Tuff
Limestone
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1948
SAMPLE TYPE: Grab

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	57.2500	Grams per tonne
Copper	5.4100	Per cent
Zinc	14.3800	Per cent

COMMENTS: Selected sample from a 0.15 metre vein exposed for a length of 0.61 metres.

REFERENCE: Geological Survey of Canada, Memoir 251, page 63.

CAPSULE GEOLOGY

The Asitka River occurrence is located approximately 5 kilometres west of the mouth of Quenada Creek (Geological Survey of Canada Memoir 251, page 63).

The area is underlain by the Upper Triassic Dewar Formation (Takla Group) which consists predominantly of tuffs, sandstones, and argillites with minor limestones and breccia.

Sphalerite and chalcopyrite occur in a calcite and quartz vein. The vein is 0.15 metre wide and has been exposed for 0.61 metre.

A selected sample from this vein assayed trace gold, 57.25 grams per tonne silver, 14.38 per cent zinc and 5.41 per cent copper (Geological Survey of Canada Memoir 251, page 63).

BIBLIOGRAPHY

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GSC MAP 962A
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/02

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 017**

MINFILE NUMBER: **094D 018**

NATIONAL MINERAL INVENTORY: 094D8 Pb1

NAME(S): **CAR, CARRUTHERS CREEK, CAR 1-64,
 ANT1-64, PASS**

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094D08W
 BC MAP:
 LATITUDE: 56 18 50 N
 LONGITUDE: 126 16 03 W
 ELEVATION: 1530 Metres
 LOCATION ACCURACY: Within 500M
 COMMENTS: Centre of mineralized quartz veins (Property File - Car Claims
 Compilation Map, Interior Syndicate, 1973).

MINING DIVISION: Omineca
 UTM ZONE: 09 (NAD 83)
 NORTHING: 6244370
 EASTING: 669012

COMMODITIES: Silver Lead Copper Zinc Gold

MINERALS

SIGNIFICANT: Galena Pyrite Chalcopyrite Sphalerite Pyrrhotite
 ASSOCIATED: Quartz
 ALTERATION: Pyrite Limonite
 ALTERATION TYPE: Pyrite Oxidation
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
 CLASSIFICATION: Hydrothermal Epigenetic
 TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Dewar	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Argillite
 Tuff
 Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
 TERRANE: Stikine
 METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: VEIN REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1948
 SAMPLE TYPE: Grab

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	327.4200	Grams per tonne
Gold	0.3400	Grams per tonne
Copper	0.8200	Per cent
Lead	7.1500	Per cent
Zinc	1.0000	Per cent

COMMENTS: A sample from the larger vein, 650 metres southwest of the Car occurrence.

REFERENCE: Geological Survey of Canada Memoir 251, page 63.

CAPSULE GEOLOGY

The Car occurrence is located about 9 kilometres northeast of Mount Carruthers, just south of Carruthers Pass (Property File - Car Claims Compilation Map, Interior Syndicate, 1973).

The showing is hosted in Upper Triassic Dewar Formation (Takla Group) tuffs, sandstones and argillites. The Dewar Formation in this area is bounded to the southwest by the northwest trending Quenada thrust fault and to the northeast by the north-northwest trending Ingenika fault.

The claims are predominantly underlain by argillites and fine-grained diorites. The contact between these rocks forms a pyritic zone.

Galena and pyrite occur in widely separated and discontinuous quartz veins that range from 0.64 to 5.1 centimetres in width. The host rocks commonly contain up to 10 per cent pyrrhotite (Assessment Report 4879). High silver values are reported to be associated with

CAPSULE GEOLOGY

the galena (Assessment Report 4879).
Approximately 650 metres to the southwest, two veins contain chalcopyrite, galena, sphalerite, limonite and banded crystalline quartz. The veins are 5.1 and 3.8 centimetres wide and are hosted in a gabbroic dyke approximately 30 metres wide. This dyke intrudes green tuffs. A sample from the widest vein assayed 0.34 gram per tonne gold, 327.42 grams per tonne silver, 0.82 per cent copper, 7.15 per cent lead and 1 per cent zinc (Geological Survey of Canada Memoir 251 pages 63).

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EMPR ASS RPT *4879
EMPR GEM 1974-301,302
EMPR PF (*Compilation Maps on the Car 1-64 Claims, Interior Syndicate, 1973; In 094D General - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM *251, p. 63
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/11

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 019**

NATIONAL MINERAL INVENTORY: 094D8 Cu3

NAME(S): **KLI**, EL PASO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 26 40 N
LONGITUDE: 126 04 21 W
ELEVATION: 1365 Metres

NORTHING: 6259390
EASTING: 680450

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization on a northeast flowing, unnamed tributary of Dortatelle Peak (Assessment Report 3977).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Epidote Garnet Calcite
ALTERATION: Silica Pyrite Epidote Calcite Garnet
ALTERATION TYPE: Silicific'n Pyrite Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Cretaceous

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Kliyul Creek Body

LITHOLOGY: Andesitic Flow
Limestone
Shale
Sandstone
Quartz Monzonite
Quartz Monzonite Dike
Ultramafic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Kli occurrence is located, on a northeast flowing unnamed tributary of Kliyul Creek, approximately 12 kilometres east of Dortatelle Peak (Assessment Report 3977).

Regionally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanics which are intruded by the Early Jurassic Hogen batholith, to the south. To the east, the rocks are intruded by leucocratic granodiorite of the Early Cretaceous Kliyul Creek body. Two, northwest trending, elongate, Late Triassic, Alaskan-type ultramafic bodies occur in the general area. The major structure in this area is the north trending Dortatelle fault. Smaller faults trend northwest.

Locally, the area is underlain by flat-lying andesitic flows overlain by interbedded shale, limestone and sandstone. These are intruded by quartz monzonite dykes, which trend northwest and are parallel to shearing and schistosity. The intrusive rocks, consisting of quartz monzonites and an ultramafic body, generally outcrop on the northeast side of Kliyul Creek.

Mineralization is related to a silicified, and highly pyritized zone, that marks the contact between the volcanic flows and sediments. Silicified zones are also common along shears and fractures. Visible mineralization consists of irregularly disseminated chalcopyrite and pyrite in these "skarn" contact zones. Epidote, calcite and garnet are associated with these zones.

Approximately 500 metres to the east, on Kliyul Creek near the confluence with the unnamed tributary, is another chalcopyrite showing. This showing is hosted in an altered band at the ultramafic-andesite contact.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 315
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR GEM 1970-187, 1971-61
EMPR ASS RPT *3264, *3977
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/04

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 020**

NATIONAL MINERAL INVENTORY: 094D8 Mo1

NAME(S): **RINGO, RINGO 6, KLIYUL (MILLER) CREEK,
NORLEN, TUMBLE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 24 32 N
LONGITUDE: 126 06 12 W
ELEVATION: 2150 Metres

NORTHING: 6255354
EASTING: 678717

LOCATION ACCURACY: Within 500M
COMMENTS: Centre of known mineralization within the Ringo 6 claim unit
(Assessment Report 4092,4582).

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Unknown

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Felsite Dike
Pegmatite
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1972

COMMODITY

Molybdenum

GRADE

1.5100

Per cent

REFERENCE: Assessment Report 3839.

CAPSULE GEOLOGY

The Ringo occurrence is located approximately 10 kilometres southeast of Dortatelle Peak (Assessment Report 4092).

The occurrence is hosted within felsite dykes, which intrude Middle Triassic to Lower Jurassic Takla Group volcanics. The volcanics are also intruded by an elongate, Late Triassic, Alaskan-type ultramafic body. The Early Jurassic Hogem batholith lies further to the south. To the west, the rocks are cut by the north trending Dortatelle fault.

Mineralization occurs as uneven disseminations, flakes and rosettes of molybdenite within the dykes. At the documented location, the felsite dyke is about 1-metre thick and is traceable for 30 metres (Assessment Report 3839). A grab sample of this material assayed 1.51 per cent molybdenum (Assessment Report 3839).

Other occurrences of molybdenite are found within pegmatites and in quartz veins. These are located about 400 metres to the north and 2 kilometres to the east, of this location. A minor chalcopyrite-pyrite occurrence is also found in pegmatites and quartz veins. Another, similar, chalcopyrite occurrence is located approximately 1 kilometre to the west.

BIBLIOGRAPHY

EMPR GEM 1972-480
EMPR ASS RPT *3839, *4092, *4582
GSC MEM 251, p. 64

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 317
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/27

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 021**

NATIONAL MINERAL INVENTORY: 094D8 Mo2

NAME(S): **DORTATELLE** DORTATELLE CREEK

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 23 49 N
LONGITUDE: 126 07 10 W
ELEVATION: 1765 Metres

NORTHING: 6253983
EASTING: 677779

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Molybdenum Copper Silver

MINERALS

SIGNIFICANT: Molybdenite Pyrite Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Gneissic Granodiorite

HOSTROCK COMMENTS: The host is the Hogem batholith, recently re-defined as the Hogem Intrusive Complex from mapping to the south (Open File 1992-11).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1948
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 1.7000 Grams per tonne
Molybdenum 0.1400 Per cent

REFERENCE: Geological Survey of Canada, Memoir 251, page 64.

CAPSULE GEOLOGY

The Dortatelle occurrence is located about 9 kilometres southeast of Dortatelle Peak (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973). The occurrence is hosted in the Early Jurassic Hogem batholith (mapped as the Late Triassic to Early Cretaceous Hogem Intrusive Complex to the south). The batholith intrudes Middle Triassic to Lower Jurassic Takla Group volcanics and is truncated, to the west, by the north trending Dortatelle fault. Mineralization occurs in quartz veins in gneissic granodiorite. The quartz veins are at least "several inches wide" (Geological Survey of Canada Memoir 251). The veins contain molybdenite, pyrite, pyrrhotite and chalcopyrite. A selected sample assayed 0.14 per cent molybdenite and 1.7 grams per tonne silver (Geological Survey of Canada Memoir 251).

BIBLIOGRAPHY

EMPR PF (In 094D General - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
EMPR OF 1992-11
EMPR BULL 70
GSC MEM *251, p. 64
GSC MAP 962A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 319
REPORT: RGEN0100

BIBLIOGRAPHY

GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/13

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 022**

NATIONAL MINERAL INVENTORY: 094D8 Cr1

NAME(S): **MESILINKA RIVER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 23 49 N
LONGITUDE: 126 05 00 W
ELEVATION: 1982 Metres

NORTHING: 6254077
EASTING: 680007

LOCATION ACCURACY: Within 500M

COMMENTS: The location is plotted from Map 962A (Geological Survey of Canada, Memoir 251).

COMMODITIES: Chromium

MINERALS

SIGNIFICANT: Chromite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M05 Alaskan-type Pt±Os±Rh±Ir

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Upper Triassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Pyroxenite
Peridotite

HOSTROCK COMMENTS: The age of the ultramafic is Late Triassic (Geological Survey of Canada, Open File 342).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Mesilinka River occurrence is located about 12 kilometres east-southeast of Dortatelle Peak (Geological Survey of Canada, Memoir 251).

The occurrence is hosted in a Late Triassic, Alaskan-type ultramafic body. The ultramafic, intruding Middle Triassic to Lower Jurassic Takla Group volcanics, is approximately 2.5 kilometres in length and trends northwest (Geological Survey of Canada Open File 342). The intrusion is obliquely truncated, to the south, by a northwest trending fault. Across the fault lies the Early Jurassic Hogem batholith.

Mineralization consists of disseminated chromite within pyroxenites and peridotites. The chromite grains are up to 1.3 centimetres in diameter (Geological Survey of Canada Memoir 251).

BIBLIOGRAPHY

EMPR PF (In 094D General - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MEM *251
GSC MAP *962A
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/13

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 023**

NATIONAL MINERAL INVENTORY: 094D9 Cu3

NAME(S): **KLIYUL**, KLISUM, KLI,
KENNCO

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:
LATITUDE: 56 30 51 N
LONGITUDE: 126 07 46 W
ELEVATION: 1760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of known, drilled mineralization (Assessment Report 13258, 9464 and 5211).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6266999
EASTING: 676617

COMMODITIES: Gold Copper Iron Silver

MINERALS

SIGNIFICANT: Magnetite Chalcopyrite
ALTERATION TYPE: Skarn Propylitic Silicific'n Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Shear Disseminated Vein
CLASSIFICATION: Skarn Industrial Min. Hydrothermal
TYPE: K04 Au skarn L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: 113 Sn veins and greisens Metres
COMMENTS: Dimensions of the zone containing the most significant mineralization.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Jurassic-Cretaceous

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Altered Andesite Tuff
Andesitic Feldspar Crystal Tuff
Augite Volcanic
Pyroclastic
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: SKARN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Gold 51.6560 Grams per tonne
Copper 0.4600 Per cent
COMMENTS: A 10 to 30-metre gold bearing zone of the skarn assayed from 51.656 to 82.284 grams per tonne gold.
REFERENCE: Assessment Report 13258.

ORE ZONE: TOTAL REPORT ON: Y
CATEGORY: Indicated YEAR: 1994
QUANTITY: 2300000 Tonnes
COMMODITY GRADE
Gold 1.3000 Grams per tonne
Copper 0.4500 Per cent
Silver 6.9000 Grams per tonne
COMMENTS: Previous drilling.
REFERENCE: Information Circular 1995-1, page 22.

CAPSULE GEOLOGY

The Kennco occurrence is located approximately 8 kilometres south-southeast of Johanson Lake (Assessment Report 13258). Regionally, the area is underlain by a northwest trending assemblage of Upper Triassic Takla Group volcanics and sediments.

CAPSULE GEOLOGY

The Takla Group rocks are intruded by the Early Jurassic Hogem batholith, to the south. To the east, the rocks are intruded by leucocratic granodiorite of the Early Cretaceous Kliyul Creek body. To the northwest, the volcanics are intruded by quartz diorite of the Early Jurassic Darb Lake stock. The major structure in this area is the north trending Dortatelle fault. Smaller faults trend northwest.

Locally, the area is underlain by Takla Group volcanics and sediments which are intruded by small dioritic intrusions of probable Jurassic to mid-Cretaceous age (Assessment Report 13258). Stratigraphically, andesitic feldspar crystal tuffs dominate the lower portions of the section. The upper part of the tuffs are sheared, silicified and pyritized. Augite-rich volcanics, interlayered with coarse pyroclastic rocks, overlie the tuffs. A discontinuous fragmental zone containing deformed limestone clasts and lenses, separates the lower and upper portions of the section. This sequence of rocks has been faulted and locally sheared. A broad anticline trends north across the property. The rocks have undergone regional greenschist metamorphism and are locally propylitically altered. The propylitic alteration has overprinted the regional chloritic and sericitic alteration.

Mineralization consists of auriferous quartz veins, magnetite-rich skarn and mineralized shear zones within altered andesitic units (Assessment Report 13258). The most significant mineralization is in a 200 by 100 metre magnetite-rich skarn zone. The skarn horizon occurs in the lower tuffs and the magnetite is a fine-grained replacement of the tuffs. The skarn is associated with silicification and widespread epidote and chlorite alteration. Chalcopyrite and pyrite occur disseminated within the skarn zone and mineralogical studies have found native gold enclosed within these sulphides (Assessment Report 13258). A 10 to 30-metre gold-bearing zone assayed 51.656 to 82.284 grams per tonne gold and 0.46 per cent copper (Assessment Report 13258).

Quartz veins, up to 2-metres wide, are found sporadically on the property and contain up to 5 per cent pyrite and minor chalcopyrite. The highest reported gold value from the quartz veins is 34.285 grams per tonne. The shear zones contain minor and sporadic concentrations of gold and copper mineralization (Assessment Report 13258).

Previous drilling had outlined about 2.3 million tonnes grading 0.45 per cent copper, 1.3 grams per tonne gold and 6.9 grams per tonne silver (Information Circular 1995-1, page 22).

The property is owned by Vital Pacific Resources, Athlone Resources and Kennecott Canada. Hemlo Gold Mines acquired interest in the property in 1995.

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EMPR ASS RPT 2818, 3313, 3312, *5211, *9464, *13258, 20578, 23033, 23379, 24778
EMPR EXPL 1985-C346; 1984-344; 1980-420
EMPR GEM 1974-302; 1973-409
EMPR INF CIRC 1994-19, p. 23; 1995-1, p. 22
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29
GCNL #106, 1984; #1, 1986
N MINER Apr. 12, 1993; Mar. 6, 1995
EMPR OF 1998-10

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/14

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 024**

NATIONAL MINERAL INVENTORY: 094D10 Cu2

NAME(S): **DD**, DD 1-20

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 41 08 N
LONGITUDE: 126 58 14 W
ELEVATION: 1600 Metres

NORTHING: 6284224
EASTING: 624312

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located approximately 2 kilometres west of Two Lake Creek and approximately 11 kilometres west-southwest of Dewar Peak (Geological Survey of Canada, Memoir 251).

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Calcite Quartz
COMMENTS: Also an unidentified soft grey mineral.
ALTERATION: Malachite Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D06 Volcanic-hosted U

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	
Jurassic	Hazelton	Unnamed/Unknown Formation	

LITHOLOGY: Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1948
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 2853.0000 Grams per tonne
Gold 7.0300 Grams per tonne
Copper 8.3100 Per cent

REFERENCE: Geological Survey of Canada Memoir 251.

CAPSULE GEOLOGY

The DD showing is located about 2 kilometres west of Two Lake Creek, approximately 11 kilometres west-southwest of Dewar Peak. The occurrence is near the major northwest-trending Omineca fault, renamed the Two Lake Creek fault (Geological Survey of Canada Open File 342). The showing occurs within the fault zone which separates the Upper Triassic Takla Group from the Lower to Middle Jurassic Hazelton Group. Chalcopyrite, malachite, and azurite are found in a 1.5-centimetre wide veinlet. The veinlet also contains calcite, an unidentified soft grey mineral and a few quartz crystals. A grab sample assayed 7.03 grams per tonne gold, 2853 grams per tonne silver and 8.31 per cent copper (Geological Survey of Canada Memoir 251).

BIBLIOGRAPHY

EMPR GEM 1973-446
EMPR ASS RPT 4856
GSC MEM *251
GSC MAP *962A
GSC OF 342

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 324
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/07/21

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 025**

NATIONAL MINERAL INVENTORY: 094D8 Cu2

NAME(S): **SOUP**, OLD SOUP, SOUP 1-10

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 28 13 N
LONGITUDE: 126 04 01 W
ELEVATION: 2010 Metres

NORTHING: 6262278
EASTING: 680670

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the two northern-most skarn zones, near the centre of the original Soup 1 to 4 claims (Assessment Report 16655). See also Soup South, 094D 105.

COMMODITIES: Gold Copper Iron Magnetite

MINERALS

SIGNIFICANT: Magnetite Chalcopyrite Pyrite
ASSOCIATED: Magnetite Actinolite Garnet Epidote Quartz
ALTERATION: Malachite Azurite Hematite Epidote Actinolite

ALTERATION TYPE: Skarn Oxidation Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Stratiform Vein Podiform
CLASSIFICATION: Skarn Industrial Min.
TYPE: K04 Au skarn K01 Cu skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Unknown

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Augite Porphyry Flow
Diorite
Calcareous Andesitic Tuff
Andesitic Flow
Augite Porphyry Dike
Microdiorite
Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SKARN

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Chip
COMMODITY GRADE
Gold 27.0850 Grams per tonne
Copper 0.4100 Per cent

COMMENTS: A 1-metre chip sample of oxidized magnetite.
REFERENCE: Property File - Athlone Resources Ltd., Prospectus, 1988.

CAPSULE GEOLOGY

The Old Soup occurrence is located about 15 kilometres east of Dortatelle Peak, on the southwest facing slope of a ridge separating the Croydon and Kliyul creeks (Assessment Report 16655).

Regionally, the area is underlain by a northwest trending assemblage of Middle Triassic to Lower Jurassic Takla Group volcanics and sediments. The Takla Group rocks are intruded by the Early Jurassic Hogem batholith, to the south. To the east, these rocks have been intruded by leucocratic granodiorite of the Early Cretaceous Kliyul Creek body. Two, northwest trending, elongate, Alaskan-type, ultramafic bodies also occur in the general area. The major structure in the area is the north trending Dortatelle fault. Smaller faults trend northwest.

Locally, the oldest exposed rocks are andesitic flows interfingering with augite porphyry flows and intruded by augite porphyry dykes. These rocks grade into a succession of augite

CAPSULE GEOLOGY

porphyry flows with minor calcareous andesitic tuffs. This stratigraphic succession has been intruded by diorite stocks, dykes and sills, microdiorites and quartz monzonite.

Massive, northwest trending, stratiform lenses (or beds) of skarn occur near the base of the augite porphyry. The skarn is magnetite-rich with appreciable concentrations of gold and copper. At least 3 skarn horizons are recognized and these possibly represent replacement of calcareous tuffs (Assessment Report 16655). The skarn occurs as a series of parallel lenses 1 to 5-metres thick, which are intermittently exposed for distances up to several hundred metres along strike.

Massive magnetite, ranging from 60 to 100 per cent, is concentrated near the top of the horizons. Peripheral zones of disseminated magnetite, pyrite and chalcopyrite are 5 to 20 metres thick and underlie most massive horizons. Lenses of massive pyrite occur within, or adjacent to, these peripheral zones. Outcrops of the skarn are characteristically highly oxidized and contain epidote, actinolite and fine-grained garnet. Malachite, azurite and hematite are common oxidation features.

Cross-cutting faults, which offset the skarn horizons, contain similar mineralization within quartz-magnetite veins. Samples from these veins assayed up to 68.91 grams per tonne gold (Property File - Athlone Resources Ltd., Prospectus, 1988).

Skarn mineralization, at the documented location, occurs at the contact between a diorite and a porphyritic (augite) andesite. A 1-metre chip sample, from an oxidized magnetite zone, assayed 27.085 grams per tonne gold and 0.41 per cent copper (Property File -

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EMPR GEM 1971-61
EMPR P 1989-3, p. 111
EMPR PF (*Athlone Resources Ltd., Prospectus, Nov. 22, 1988)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29
GCNL Aug.14, 1989; Oct.12, 1994; Aug.28, 1996
N MINER Mar.6, 1995
V STOCKWATCH July 13, 1989; Aug.29, 1990; Feb.1, 1991; July 9,15, 1993; May 2, Aug.24, Oct.11, 1994; May 16, June 27, Aug.2, Oct.17, 1995; Jan.23, Mar.11,22, May 6,9, July 16,18, Aug.27,29, 1996
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1996/12/06

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 026**

NATIONAL MINERAL INVENTORY: 094D9 Cr1

NAME(S): **WREDE CREEK CHROMITE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 40 20 N
LONGITUDE: 126 08 21 W
ELEVATION: 2105 Metres

NORTHING: 6284558
EASTING: 675286

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 11 kilometres north of the southeast end of Johanson Lake (Geological Survey of Canada Memoir 251).

COMMODITIES: Chromium

MINERALS

SIGNIFICANT: Chromite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Magmatic Syngenetic Industrial Min.
TYPE: M05 Alaskan-type Pt±Os±Rh±Ir

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Triassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Ultramafic
Serpentinite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Wrede Creek Chromite occurrence is located approximately 11 kilometres north of the south end of Johanson Lake (Geological Survey of Canada Memoir 251, page 64).

The showing is hosted in an Late Triassic Alaskan-type ultramafic intrusion. This ultramafic body intrudes Middle Triassic to Lower Jurassic Takla Group volcanics belonging to the Quesnel Terrane. The intrusion is bounded to the southwest by the southwest-trending Lay Range fault and to the northeast by a cross fault between the Lay Range fault and the Swannell fault. Across the Swannell fault, to the east, lies the para-autochthonous Cassiar Terrane represented by Upper Proterozoic rocks assigned to the Ingenika Group.

Mineralization consists of grains and rare blebs of chromite, up to 1.27 centimetres in diameter, within the ultramafic body (Geological Survey of Canada Memoir 251). Several small seams of chromite, from 1.27 to 2.54 centimetres in thickness, were found in talus blocks of serpentinite (Geological Survey of Canada Memoir 251).

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GSC MAP 962A
GSC MEM *251, p. 64
GSC OF 342
GSC P 46-6, p. 6; 76-29
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/29

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 027**

NATIONAL MINERAL INVENTORY: 094D9 Au6

NAME(S): **GOLDWAY**, MO, PS,
SOLO

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 14 N
LONGITUDE: 126 14 11 W
ELEVATION: 1875 Metres

NORTHING: 6267439
EASTING: 670011

LOCATION ACCURACY: Within 500M
COMMENTS: Located near the headwaters of Goldway Creek (Assessment Report 21394).

COMMODITIES: Gold Silver Lead

MINERALS

SIGNIFICANT: Pyrite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au L01 Subvolcanic Cu-Ag-Au (As-Sb)
I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Takla Unnamed/Unknown Formation

LITHOLOGY: Hornblende Porphyritic Andesite
Porphyritic Augite Hornblende Basalt
Basalt
Andesite
Tuff
Volcaniclastic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: VEIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 58.2000 Grams per tonne
Gold 4.3800 Grams per tonne
COMMENTS: Sample taken from the poorly exposed PS vein.
REFERENCE: Assessment Report 21394.

CAPSULE GEOLOGY

The Goldway occurrence is located near the headwaters of Goldway Creek, due south of the lake at the headwaters of Solo Creek (Assessment Report 21394).
The area is underlain mainly by submarine basaltic and andesitic island-arc volcanics and sediments of the Upper Triassic to Lower Jurassic Takla Group (Assessment Report 21394). These stratified rocks have undergone regional greenschist metamorphism and are cut by ultramafic to intermediate intrusives of Late Triassic to Cretaceous age (Assessment Report 21394).
The area is bounded to the west by the north-trending Findlay-Ingenika fault and to the east, by the north-trending Dortatelle fault. Related shears and faults cut both the intrusives and stratified rocks and trend in two main directions. The dominant direction of shearing is north, with subordinate shears and faults trending west (Assessment Report 21394).
Locally, the area is underlain mainly by feldspar, augite and/or hornblende phyric andesites and basalts, tuffs, lapilli tuffs, volcaniclastic siltstones, sandstones and argillites. These rocks

CAPSULE GEOLOGY

are gently folded and, to the northeast, intruded by the Early Jurassic Goldway stock (Assessment Report 21394). This intrusive complex ranges in composition from hornblendite to granodiorite, but is predominantly fine to medium-grained diorite to quartz diorite. The volcanics and sediments at the, generally sharp, contact have been hornfelsed (Assessment Report 21394).

These rocks have been deformed by both brittle and ductile shearing and faulting which trends predominantly northwest. Fault zones occur near the northeast and southern contact zones of the intrusive. Large en echelon tension gashes are formed within the shear zones.

Mineralization consists of minor pyrite and galena in banded white quartz veins cutting the volcanics. The poorly exposed PS vein is one of the larger veins. A grab sample from this vein assayed 4.38 grams per tonne gold and 58.2 grams per tonne silver (Assessment Report 21394). The PS vein lies within a northwest trending gully. Numerous unmineralized quartz stockworks, in chlorite and sericite-altered rock, occur at the southern end of the gully.

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EMPR AR 1946-89; 1947-102,106,107,108
GSC MEM 251, p. 259
GSC MAP 962A
GSC P 76-29
GSC OF 342

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/09

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **INDEPENDENCE** FL., KC NORTH,
KC

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:
LATITUDE: 56 30 26 N
LONGITUDE: 126 06 57 W
ELEVATION: 1725 Metres

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6266261
EASTING: 677487

LOCATION ACCURACY: Within 500M
COMMENTS: Northern exposure of the vein, approximately nine kilometres south-southeast of Johanson Lake (Assessment Report 13580).

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica Sericite Chlorite Carbonate Pyrite
ALTERATION TYPE: Silicific'n Sericitic Chloritic Quartz-Carb. Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au L01 Subvolcanic Cu-Ag-Au (As-Sb)
I01 Au-quartz veins
DIMENSION: 305 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Vein system is exposed for more than 305 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Cretaceous			Kliyul Creek Body

LITHOLOGY: Andesitic Tuff
Greywacke
Calcareous Argillite
Porphyry Flow
Hornblende Diorite
Dioritic Feldspar Porphyry Dike
Biotite Hornblende Monzonite Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel

INVENTORY

ORE ZONE: VEIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 91.2000 Grams per tonne
Gold 94.9700 Grams per tonne

COMMENTS: A grab sample of rubble from an old trench.
REFERENCE: Property File - Ritz Resources Ltd., Public Offering.

CAPSULE GEOLOGY

The Independence showing is located approximately 9 kilometres south-southeast of Johanson Lake (Assessment Report 13580). This vein system is similar to other nearby vein systems such as the KC (094D 140) and the Bruce (094D 013). For the general regional geology, refer to these occurrences.

Locally, the area is underlain by andesitic tuffs, minor intercalated greywackes and calcareous argillites, and hornblende or feldspar porphyry flows of the Middle Triassic to Lower Jurassic Takla Group. These are intruded by hornblende diorite, dioritic feldspar porphyry dykes and biotite hornblende monzonite porphyry phases of the Early Cretaceous Kliyul Creek body. Emplacement of the intrusive rocks appears to be controlled by a southeast trending splay off the Dortatelle fault (Assessment Report 13580). Alteration

CAPSULE GEOLOGY

zones are formed where faults cut the andesitic rocks. The alteration minerals include quartz, sericite, chlorite, carbonate and pyrite.

The Independence vein, exposed for over 305 metres, ranges from rusty quartz with no visible sulphides to a zone, 1.2 to 3-metres wide, of quartz veins and intensely silicified rock (Assessment Report 13580). This system, hosted in andesitic tuffs, strikes northwest and dips 70 degrees to the southwest. A grab sample of rubble from an old trench assayed 94.97 grams per tonne gold and 91.20 grams per tonne silver (Property File - Ritz Resources Ltd., 1987).

Nearby shear and fracture zones, hosting quartz veins, contain disseminated galena and chalcopyrite (Assessment Report 13580).

BIBLIOGRAPHY

EMPR ASS RPT 5600, 5135, 5976, 10950, 10346, *13580, 14416, 15182,
15583
EMPR AR 1947-105
EMPR PF (In 094D 140 - *Ritz Resources Ltd., Prospectus, Aug. 26,
1987)
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/13

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 029**

NATIONAL MINERAL INVENTORY: 094D8 Cu6

NAME(S): **BANJO**, BAP, KC 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 29 37 N
LONGITUDE: 126 06 46 W
ELEVATION: 1680 Metres

NORTHING: 6264755
EASTING: 677739

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the Banjo veins. The Bap veins occur approximately 400 metres upslope to the northeast (Assessment Report 13580, 5600, and 5135).

COMMODITIES: Gold Copper Silver Lead Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Galena Sphalerite Pyrite

ASSOCIATED: Quartz

ALTERATION: Silica Chlorite Sericite Carbonate Malachite

ALTERATION TYPE: Silicific'n Chloritic Sericitic Carbonate Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Cretaceous			Kliyul Creek Body

LITHOLOGY: Biotite Hornblende Monzonite Porphyry
Andesitic Tuff
Greywacke
Calcareous Argillite
Hornblende Diorite
Porphyry Flow
Dioritic Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Grab

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	3.0000	Grams per tonne
Gold	0.7000	Grams per tonne
Copper	0.1100	Per cent

COMMENTS: A grab sample of siliceous andesite tuff containing pyrite seams from the Banjo area.
REFERENCE: Assessment Report 13580.

CAPSULE GEOLOGY

The Banjo occurrence is located near the headwaters of Kliyul Creek, approximately 12 kilometres south-southeast of Johanson Lake (Assessment Report 13580). The Bap veins, included in this occurrence, lie approximately 400 metres to the northeast. These two vein systems are similar to other nearby vein systems such as the KC (094D 140) and the Bruce (094D 013). For the general regional geology, refer to both of these occurrences.

Locally, the area is underlain by andesitic tuffs, minor intercalated greywackes and calcareous argillites, and hornblende or feldspar porphyry flows of the Middle Triassic to Lower Jurassic Takla Group. These rocks are intruded by hornblende diorite, dioritic feldspar porphyry dykes and biotite hornblende monzonite

CAPSULE GEOLOGY

porphyry phases of the Early Cretaceous Kliyul Creek body. Emplacement of the intrusive rocks appears to be controlled by a southeast trending splay off the Dortatelle fault (Assessment Report 13580). Alteration zones are formed where faults cut the andesitic rocks. The alteration minerals include quartz, sericite, chlorite, carbonate and pyrite.

The Banjo veins consist of silicified and pyritized shear zones and quartz veins cutting the biotite-hornblende monzonite porphyry. Pyrite occurs as disseminations or in small fracture seams within both the quartz veins and shear zones. Malachite staining occurs near these zones. A grab sample of siliceous andesite tuff, with seams of pyrite, assayed 0.7 gram per tonne gold, 3 grams per tonne silver and 0.11 per cent copper (Assessment Report 13580).

The Bap veins consist of several north and northwest-trending quartz veins hosted in andesitic tuffs. The veins contain massive and disseminated chalcopyrite, malachite and pyrite with minor galena and sphalerite (Assessment Report 5600). Chalcocite occurs along some of the fractures and there are numerous intervals of malachite and manganese-stained gossanous ash tuffs surrounding the veins. Mineralization is not restricted to the veins and a copper-rich zone of bedrock material assayed 0.62 per cent copper over 3 metres (Assessment Report 5600).

BIBLIOGRAPHY

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EMPR GEM 1974-302
EMPR AR 1947-105
EMPR PF (BP Minerals Ltd., Soil Sampling Maps, 1974; In 094D 140 - Ritz Resources Ltd., Prospectus, Aug. 26, 1987)
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/13

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 030**

NATIONAL MINERAL INVENTORY: 094D16 Au1

NAME(S): **KING GEORGE MC**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D16W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 51 53 N
LONGITUDE: 126 29 57 W
ELEVATION: 1300 Metres

NORTHING: 6305114
EASTING: 652452

LOCATION ACCURACY: Within 500M

COMMENTS: Located just to the west of McConnell Creek, approximately 1 kilometre downstream from the lowermost of the McConnell lakes (Assessment Report 10343).

COMMODITIES: Gold Copper Lead Molybdenum

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena Molybdenite
ASSOCIATED: Quartz
ALTERATION: Silica Malachite Pyrite Epidote Kaolinite

ALTERATION TYPE: Silicific'n Oxidation Pyrite Epidote Argillic
 Sericitic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: L04 Porphyry Cu ± Mo ± Au

DIMENSION: 170 x 100 Metres

COMMENTS: Area of irregularly distributed mineralization.

STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	Fleet Peak Pluton
Lower Jurassic			

LITHOLOGY: Granodiorite
 Quartz Monzonite
 Monzodiorite
 Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1984
SAMPLE TYPE: Grab	
<u>COMMODITY</u>	<u>GRADE</u>
Gold	1.3710 Grams per tonne
Copper	0.1500 Per cent

COMMENTS: A semi-continuous 5-metre sample section from a hand-dug trench.

REFERENCE: Assessment Report 13065.

CAPSULE GEOLOGY

The King George occurrence is located just to the west of McConnell Creek, approximately 1 kilometre downstream from the lowermost of the McConnell lakes (Assessment Report 10343).

The regional geology is similar to that of the Gerle Gold occurrence (094D 006).

Locally, the area is underlain by homogenous quartz monzonite to monzodiorite and diorite phases of the Early Jurassic Fleet Peak pluton. In the area of interest, the outcropping intrusive is a medium to coarse-grained pink biotite granodiorite (Assessment Report 13065).

The granodiorite is cut by two sub-parallel, well-exposed zones of shearing and fracturing (Assessment Report 13065). Within these northwest trending zones, the granodiorite is strongly silicified, epidotized and pyritized. Kaolinized and sericitized zones with associated fractures occur within the granodiorite (Assessment Report

CAPSULE GEOLOGY

The principal showing consists of granodiorite cut by silicified fracturing and a network of irregular-trending white quartz veinlets. The mineralization is irregularly distributed over a triangular-shaped area roughly 100 by 170 metres. The mineralization consists of malachite, pyrite and chalcopyrite with minor galena and molybdenite. The mineralization is disseminated in the host rock, concentrated in veinlets and in zones of intense silicification (Assessment Report 13065). A semi-continuous 5-metre sample section, from a hand-dug trench, assayed 0.15 per cent copper and 1.371 grams per tonne gold (Assessment Report 13065).

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EMPR ASS RPT *13065, *10343
EMPR BULL 2-10
EMPR GEM 1973-447, 1975-E163
GSC MAP 962A
GSC MEM 251, p. 58
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/05/07

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 031**

NATIONAL MINERAL INVENTORY: 094D4 Ag1,Ag2

NAME(S): **TOMMY JACK**, GOODRIDGE, NONIE,
TRUDY, BISH, KAY,
SANDY

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D04E

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 56 08 02 N
LONGITUDE: 127 37 04 W
ELEVATION: 760 Metres

NORTHING: 6221842
EASTING: 585905

LOCATION ACCURACY: Within 500M
COMMENTS: Original Tommy Jack showing near Tommy Jack Creek (Assessment Report 13778).

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite Pyrrhotite
Tetrahedrite Ruby Silver
ASSOCIATED: Quartz
ALTERATION: Silica Calcite Ankerite Dolomite Sericite
ALTERATION TYPE: Silicific'n Carbonate Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
COMMENTS: Vertical veinlets appear to form a conjugate set striking 45 and 110 degrees (Assessment Report 19581).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Shale
Argillite
Siltstone
Arkosic Sandstone
Sandstone
Granodiorite
Dacite
Conglomerate

HOSTROCK COMMENTS: The intrusive rocks are possibly contemporaneous with and related to the Cretaceous Bulkley Intrusions which occur further to the south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Silver 129.0000 Grams per tonne
Gold 31.0300 Grams per tonne
COMMENTS: Sample is a 0.6-metre diamond drill interval.
REFERENCE: Property File - Intertech Minerals Corp., Prospectus, 1988.

CAPSULE GEOLOGY

The Tommy Jack occurrence is located on the south bank of Tommy Jack Creek, approximately 1 kilometre upstream from the confluence of Tommy Jack Creek and the Sicintine River (Assessment Report 13778). The showing was first discovered in the early 1900s by Indian trappers such as Tommy Jack from Hazelton (Property File - Intertech Minerals Corp., Prospectus, 1988).

The strata underlying the entire claim area is part of a thick assemblage of non-marine sediments composed of shale, siltstone, arkosic sandstone, sandstone, and conglomerate. This assemblage

CAPSULE GEOLOGY

forms the Middle to Upper Jurassic Bowser Lake Group. The sediments were deposited in the Bowser basin, interpreted as a marginal basin open to the west. The basin was filled with sediments shed from the east as a result of tectonic thickening and from the west, sediments came from volcanic chains and older terranes (Canadian Journal of Earth Sciences, Volume 14, pages 2414-2421).

Intruding these sediments are small stocks, dykes and sills of granodiorite and dacite. These are possibly contemporaneous with and/or related to the Cretaceous Bulkley Intrusions, which occur further to the south.

Mineralization at the original showing is hosted in the sediments and further up the ridge (approximately 3 kilometres to the southeast) it is contained within both the sediments and intrusives. Mineralization is found in veinlets, veins and stockworks adjacent to and in the intrusive bodies. The sulphide assemblage consists of galena, sphalerite, chalcopyrite, pyrite, pyrrhotite and trace amounts of tetrahedrite and ruby silver. The vertical veins and veinlets appear to form conjugate sets striking 45 degrees and 110 degrees (Assessment Report 19581).

Pervasive carbonate, sericite and silica alteration is represented by ankerite, dolomite, calcite, sericite and quartz.

One of the best drill hole intersections assayed 31 grams per tonne gold and 129 grams per tonne silver for 0.6 metres (Property File - Intertech Minerals Corp., Prospectus, 1988).

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EMPR EXPL 1985-C345; 1986-C383; 1987-C324
EMPR GEM 1974-292
GSC P 76-29
GSC MEM 274, p. 200
CJES VOL *14, pp. 2414-2421
N MINER Oct 6, Sept 15, Nov 17, 1986
GCNL Jan 2, 1987

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/14

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

The occurrence is hosted in Upper Triassic Dewar Formation (Takla Group) tuffs and sediments. The Dewar Formation is overlain by the Savage Mountain Formation (Takla Group) volcanics. These rocks strike northwest and dip approximately 20 degrees to the northeast (Geological Survey of Canada Open File 342). The rocks are intruded, to the southwest, by quartz monzonite related to the Early Jurassic Hogem batholith, which lies about 10 kilometres to the east. The major faults in the area trend north to northwest with smaller cross-faults trending west-southwest.

The Fred occurrence comprises five mineral showings which are; the Main showing (also known as the RMT and A), the North showing (also known as the DB), the CV and the CVH (these showings are sometimes referred to as the B) and the BC showing.

The Main showing consists of very fine-grained disseminated bornite, chalcocite and chalcopyrite (identified by polished sections, Assessment Report 833) in interbedded laminated siltstones, lapilli tuffs and coarse tuffs. Malachite staining is present in small shears within sheared tuffs. Native copper occurs, less than 250 metres to the east, in andesite porphyry. A sample from this area assayed 2.65 per cent copper, 6.86 grams per tonne silver and 0.2 gram per tonne gold (Property File - Kikuchi, T., 1969).

The North showing, approximately 500 metres to the west of the Main showing, is hosted in malachite stained, black shaly siltstones. Minor chalcocite is visible and a grab sample from this area assayed 1.57 per cent copper and 13.7 grams per tonne silver (Assessment Report 833).

The BC showing is found approximately 500 metres to the southeast of the Main showing. The vein, 7 to 15 centimetres wide, is hosted in andesite porphyry and contains chalcocite and bornite. A channel sample, across the widest point of the vein, assayed 50.9 per cent copper, 603.4 grams per tonne silver and 0.3 grams per tonne gold (Property File - Letter from the President, Northstar Copper, 1967).

The CVH showing is located approximately 600 metres south-southeast of the Main showing. This showing consists of a contact zone between andesite porphyry and brecciated, highly vesicular rock. This zone contains bornite, chalcocite and specular hematite. A 7.3-metre chip sample, taken from a trench, assayed 2.60 per cent copper, 5.14 grams per tonne silver and 0.2 gram per tonne gold (Property File - Kikuchi, T., 1969).

The CV showing is located approximately 45 metres west of the CVH trench. This showing is hosted in a shear zone, which cuts the contact between the andesite porphyry and the brecciated, highly vesicular rock. The mineralization consists of bornite, covellite, chalcocite and specular hematite. A 3.66-metre channel sample assayed 3.3 per cent copper and 10.3 grams per tonne silver (Property File - Kikuchi, T., 1969).

Everest Mines and Minerals Ltd. trenched the property in 1997. A 5.5-metre sample assayed 7.3 per cent copper and 46.6 grams per tonne silver (Exploration in BC 1997, page 28).

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EMPR ASS RPT *833, 1084, 5247
EMPR EXPL 1977-E213; 1997-28
EMPR GEM 1969-102; 1970-186; 1972-478; 1973-400; 1974-293
EMPR PF (White, W.H. (1967): Progress Report #2 and #3; Letter from the President, Northstar Copper, 1967; *Kikuchi, T. (1969): Geological and Geochemical Report for Northstar Copper Mines Ltd.)
EMR MP CORPFILE (Northstar Copper Mines Ltd.; Kaza Copper Ltd.)
GSC MAP 962A
GSC MEM 251
GSC OF *342
GSC P 76-29
GCNL #87(May 6), 1997
W MINER Oct 3, 1968 p. 22, 144
WWW <http://infomine.com/index/properties/NORTHSTAR-KAZA.html>

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/04

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 033**

NATIONAL MINERAL INVENTORY: 094D2 Cu3

NAME(S): **CHACO BEAR, DAVE, DAVE 3,
PETEKA 4, DAVE 1-8, PETEKA 1-4**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D02W
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 56 08 29 N
LONGITUDE: 126 55 42 W
ELEVATION: 1476 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6223749
EASTING: 628723

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization on the Dave 3 claim (Assessment Report 1616 and Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Hematite Quartz Calcite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Jurassic

GROUP

Hazelton

FORMATION

Telkwa

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Chloritic Mafic Volcanic
Andesite
Tuff
Agglomerate
Porphyry Flow
Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Takla Trench

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1985

COMMODITY

GRADE

Silver	11.0000	Grams per tonne
Gold	14.9000	Grams per tonne
Copper	5.2000	Per cent

COMMENTS: One of the best assays from mineralization 700 metres downstream from the Dave occurrence.

REFERENCE: Assessment Report 14678.

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1985

COMMODITY

GRADE

Silver	8.4000	Grams per tonne
Gold	6.1000	Grams per tonne
Copper	12.2000	Per cent

COMMENTS: One of the best assays from samples of vein material 700 metres downstream from the Dave occurrence.

REFERENCE: Assessment Report 14678.

CAPSULE GEOLOGY

The Dave occurrence is located near the Driftwood River, approximately 3 kilometres due south of Mount Coccola. The showing occurs on the 1985 Peteka 4 claim and the 1968 Dave 3 claim (Property

CAPSULE GEOLOGY

File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The geological setting is the same as the Bearnx occurrence (refer to 094D 003 for regional geology, structure, and alteration).

The area is underlain by Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. The volcanics predominantly consist of tuffs, agglomerates and grey to green andesitic rocks. Minor porphyritic (plagioclase and/or hornblende) flows and interflow sedimentary rocks are also present on the claims. Narrow quartz feldspar porphyry dykes, 1 to 3 metres wide, intrude the volcanic rocks and strike northeast. The dykes are fine to medium grained and are possibly related to the Eocene Kastberg Intrusions (Assessment Report 14424).

Chalcopyrite, specular hematite and calcite occur in quartz veins and localized shear zones. These are hosted in chloritized mafic volcanics and fine to medium-grained andesites. The veins are irregular, fracture controlled and up to 25 millimetres in width.

Mineralization is found at various places downstream of the showing for approximately 1 kilometre. Two of the best samples assayed 12.2 per cent copper, 6.1 grams per tonne gold, and 8.4 grams per tonne silver and 5.2 per cent copper, 14.9 grams per tonne gold and 11 grams per tonne silver, respectively (Assessment Report 14687). These samples were taken approximately 700 metres downstream of the Dave occurrence.

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EMPR ASS RPT *1616, 8335, *14424, *14678, 22958
EMPR EXPL 1986-C380,C381
EMPR GEM 1974-297
EMPF OF 1994-14
EMPR PF (In 094D General - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973; see Mount Polley, 093A 008 - Imperial Metals Corporation information folder)
GSC MAP 962A
GSC MEM 251
GSC OF 341
GSC P 76-29
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/30

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 034**

NATIONAL MINERAL INVENTORY: 094D9 Cu4

NAME(S): **RED**

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 44 06 N
LONGITUDE: 126 18 03 W
ELEVATION: 1915 Metres

NORTHING: 6291141
EASTING: 665108

LOCATION ACCURACY: Within 500M

COMMENTS: Diamond drill hole R-84-12 near the headwaters of Wrede Creek
(Assessment Report 13316).

COMMODITIES: Copper Gold Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Copper Cuprite Molybdenite
Pyrite

COMMENTS: Native copper occurs with black metallic crystals of possibly
chalcocite or cuprite.

ASSOCIATED: Quartz Epidote Calcite
ALTERATION: Malachite Sericite Quartz Epidote Chlorite
Pyrophyllite Calcite

ALTERATION TYPE: Oxidation Argillic Propylitic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Tabular
MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Fleet Peak Pluton

LITHOLOGY: Andesitic Flow
Andesitic Tuff
Augite Porphyry
Hornblende Porphyry
Diorite
Quartz Diorite
Hornblende Diorite
Quartz Diorite Porphyry
Diorite Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Drill Core
COMMODITY _____ GRADE _____
Copper 0.2800 Per cent

COMMENTS: The highest grade interval from drill hole R-84-09, across 3 metres.
REFERENCE: Assessment Report 13316.

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Drill Core
COMMODITY _____ GRADE _____
Gold 0.1500 Grams per tonne
Copper 0.2600 Per cent

COMMENTS: Highest grade interval from drill hole R-84-12.
REFERENCE: Assessment Report 13316.

CAPSULE GEOLOGY

The Red occurrence, located on the 1984 diamond drill hole R-84-12, is located near the headwaters of Wrede Creek (Assessment Report 13316).

The regional geology is similar to that of the Shred occurrence (094D 111), which lies approximately 4 kilometres to the southeast.

Locally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group andesitic flows and tuffs, augite porphyry and hornblende porphyry. These rocks are intruded by diorite, quartz diorite, hornblende diorite, quartz diorite porphyry and diorite porphyry related to the Early Jurassic Fleet Peak pluton. The dioritic rocks are predominantly dykes and sills. The rocks generally form west-northwest trending lenticular slivers. These rocks are cut by local faults which also trend west-northwest.

Alteration is generally phyllic and argillic, becoming increasingly more propylitic with depth. Alteration minerals include sericite, quartz, epidote, chlorite, pyrophyllite and calcite.

Chalcopyrite is generally found in veins and veinlets with associated pyrite. The veins are composed of quartz, epidote and calcite. The chalcopyrite tends to occur within the pyrite blebs. Molybdenite is typically found along the vein margins. Mineralized veins are found in both the volcanic and plutonic rocks.

Dendritic growths of native copper in small vugs were found in drill hole R-84-09, approximately 600 metres to the west of R-84-12. The native copper occurs with black metallic crystals of possibly chalcocite or cuprite (Assessment Report 13316). The best drill intersection from R-84-09 assayed 0.28 per cent copper (Assessment Report 13316). This 3-metre interval contains mineralized veins cutting diorite porphyry.

Drill hole R-84-12 contains veined andesitic tuffs and flows. The best interval assayed 0.26 per cent copper and 0.15 gram per tonne gold (Assessment Report 13316). Higher gold values appear to be related to small faults which cut the andesitic rocks.

Two outcrops, one approximately 700 metres to the north and the other approximately 1 kilometre to the northwest, are mineralized. The mineralization consists of chalcopyrite and malachite associated with a quartz diorite porphyry.

BIBLIOGRAPHY

- EMPR ASS RPT 1941, *13316
- EMPR EXPL 1978-E244
- EMPR GEM 1969-104
- EMPR PF (Geology Map accompanying Geological - Geochemical Report on the Red Claims, 1969; Canadian Superior Exploration Limited, Maps on the Red Group from Company Files, 1973)
- GSC MAP 962A
- GSC MEM 251
- GSC OF 342
- GSC P 76-29
- WWW [http://www.infomine.com/index/properties/RED_PROPERTY_\(011\).html](http://www.infomine.com/index/properties/RED_PROPERTY_(011).html)

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/21

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 035**

NATIONAL MINERAL INVENTORY:

NAME(S): **AXELGOLD**, PGM

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D01E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 03 48 N
LONGITUDE: 126 07 10 W
ELEVATION: 1850 Metres

NORTHING: 6216870
EASTING: 679332

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of an ilmenite-pyroxene pod (Assessment Report 15514).

COMMODITIES: Titanium

Copper

MINERALS

SIGNIFICANT: Ilmenite Chalcopyrite Pyrite Pyrrhotite

ASSOCIATED: Pyroxene

MINERALIZATION AGE: Upper Cretaceous

ISOTOPIC AGE: 101 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Gabbro

DEPOSIT

CHARACTER: Podiform Layered Disseminated

CLASSIFICATION: Magmatic Industrial Min.

TYPE: M04 Magmatic Fe-Ti±V oxide deposits

COMMENTS: Age of the mineralization is assumed to be contemporaneous with the age of the Axelgold Intrusion.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Pennsylvan.-Permian

Upper Cretaceous

GROUP

Cache Creek

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Axelgold Intrusion

ISOTOPIC AGE: 101 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Gabbro

LITHOLOGY:

Gabbro
Anorthosite
Ilmenite Pyroxenite
Trachyte
Biotite Quartz Diorite
Olivine Gabbro
Graphitic Marble
Hornfels Quartzite
Hornfels Greywacke
Hornfels Argillite

HOSTROCK COMMENTS: Age reported by Richards, T. A., 1976, Geological Survey of Canada Open File 342.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Plutonic Rocks

METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: Syn-mineralization

GRADE: Hornfels

CAPSULE GEOLOGY

The Axelgold occurrence is located approximately 6 kilometres southeast of Axelgold Peak (Assessment Report 15514).

The occurrence is hosted within the Late Cretaceous Axelgold Intrusion, which intrudes Pennsylvanian to Permian Cache Creek Group metasediments and greenstones. The intrusion is predominantly layered gabbro with minor plugs of gabbro and diabase (Geological Survey of Canada Open File 342). A 101 Ma potassium-argon age date has been determined for this intrusion (Geological Survey of Canada Open File 342) and the age of mineralization is presumably contemporaneous. The intrusion is bounded to the west by the northwest trending Pinchi fault. The Vital and Takla thrust faults occur to the west.

The Axelgold Intrusion consists of gabbros, anorthosite, olivine gabbros, ilmenite-pyroxenite layers, trachytes, and biotite-quartz diorites. All the gabbros contain plagioclase, orthopyroxene and ilmenite in various amounts. These gabbros are crudely layered with cumulative textures (Assessment Report 15514). The most common is anorthositic gabbro (and its pegmatitic phase) followed by anorthosite. Sedimentary xenoliths are numerous and consist of graphitic marbles, hornfelsed quartzites, greywackes, argillites and

CAPSULE GEOLOGY

cherts. Numerous fractures are parallel to and found within localized faults. The gabbro is silicified around these fractures.

Ilmenite occurs as disseminations in anorthositic gabbros, in concentrations up to 30 per cent, with minor chalcopyrite and pyrite (Assessment Report 15514). Pods and lenses in ilmenite-pyroxenite layers, contain between 3 and 50 per cent ilmenite (Assessment Report 15514). Pyrrhotite and pyrite are associated with the ilmenite-pyroxenite layers. The ilmenite pods and layers are numerous and are scattered roughly 1.5 kilometres north and south of the plotted location. Disseminated ilmenite is common throughout the entire intrusion.

Drilling by Wheaton River Minerals Ltd. in 2002 did not yield any significant results.

BIBLIOGRAPHY

EMPR ASS RPT *15514, 15882
EMPR EXPL 1987-C322,C333
EMPR PF (In 094D 032 - Northstar Copper Mines Ltd., Geological, Geochemical Report, 1969)
GSC MAP 962A
GSC MEM 251
GSC OF 342; 2232
GSC P 76-29
PR REL Rubicon Minerals Corp., Dec.23, 2002
WWW <http://www.infomine.com/>

DATE CODED: 1991/09/05
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 036**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAVER CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D04E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 07 19 N
LONGITUDE: 127 38 02 W
ELEVATION: 880 Metres

NORTHING: 6220492
EASTING: 584930

LOCATION ACCURACY: Within 1 KM

COMMENTS: Centre of fine-grained sediments of the Bowser Lake Group. Thin coal beds are reported to outcrop in the unnamed tributary of Tommy Jack Creek informally called Beaver Creek (Assessment Report 19581).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Jurassic

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
COMMENTS: Bedding strikes northeast to northwest and has shallow dips to the west (Assessment Report 19581).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Upper Jurassic
Unknown

GROUP

Bowser Lake

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Shale
Argillite
Siltstone
Coal
Arkosic Sandstone
Conglomerate
Granodiorite
Dacite

HOSTROCK COMMENTS: The intrusive rocks are possibly related to and contemporaneous with the Bulkley Intrusions which occur further to the south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Beaver Creek occurrence is located on an informally named tributary (Beaver Creek) of Tommy Jack Creek (Assessment Report 19581).

The regional geology is similar to that of the Tommy Jack occurrence (refer to 094D 031).

Thin coal beds are known to outcrop in Beaver Creek and its tributaries. Plant fossils and poorly preserved pelecypods are common in the shales, argillites and siltstones which host the coal. The rocks are part of the Middle to Upper Jurassic Bowser Lake Group. Other rock types are: siltstones, arkosic sandstones and minor conglomerates. The general strike of the bedding is northwest to northeast, dipping gently to the west.

Small granodiorite and dacite dykes and sills intrude the sediments and are possibly related to and/or contemporaneous with the Cretaceous Bulkley Intrusions which occur further to the south (Assessment Report 19581).

BIBLIOGRAPHY

EMPR ASS RPT *19581
GSC P 73-31; 76-29
GSC MEM 251

DATE CODED: 1991/08/14
DATE REVISED: 1992/06/03

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 037**

NATIONAL MINERAL INVENTORY:

NAME(S): **BORNITE** Z, BORNITE NORTH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 40 19 N
LONGITUDE: 126 27 34 W
ELEVATION: 1870 Metres

NORTHING: 6283754
EASTING: 655669

LOCATION ACCURACY: Within 500M

COMMENTS: Diamond drill hole ZD 76-1 (Assessment Report 6034). The Bornite North zone is at UTM 6284280 north and 655850 east (Open File 2001-2).

COMMODITIES: Copper

Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Molybdenite Pyrite
ASSOCIATED: Hematite Magnetite Carbonate Calcite Epidote
Pumpellyite

ALTERATION: Sericite Epidote Carbonate Pumpellyite Zeolite
Chlorite Malachite

ALTERATION TYPE: Sericitic Epidote Zeolitic Carbonate Oxidation
Chloritic

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Disseminated Shear
CLASSIFICATION: Hydrothermal Porphyry
TYPE: D03 Volcanic redbed Cu L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Savage Mountain	
Upper Triassic	Takla	Moosevale	

LITHOLOGY: Feldspar Porphyry
Feldspar Porphyry Flow
Agglomerate
Pyroclastic
Lapilli Tuff
Ash Tuff
Breccia
Hornblende Porphyry Flow
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Bornite occurrence, located on the 1976 ZD 76-1 diamond drill hole (Assessment Report 6034), is approximately 7.3 kilometres north northeast of Sustut Lake.

The regional geology is similar to that of the Copper King occurrence (094D 149), which lies approximately 1 kilometre to the northwest.

The oldest rocks are pyroxene porphyry flows and bladed feldspar porphyry flows of the Savage Mountain Formation. These are overlain by a mixed package of pyroclastics which include a well-bedded waterlain sequence, agglomerates, breccias and lapilli tuffs of the Moosevale Formation (Takla Group). The flows are moderately fractured and jointed. These flows are intruded by an unnamed Early Jurassic quartz diorite intrusion.

The diamond drill hole intersected Moosevale lapilli tuffs, breccias and ash tuffs of the Moosevale Formation lying on a mixture of Savage Mountain rocks consisting of alternating bladed feldspar porphyry and hornblende porphyry flows. Both the tuffs and porphyry flows contain disseminated hematite and magnetite.

Alteration minerals include epidote, carbonate, zeolite, sericite and chlorite. The sericitic alteration is weakly pervasive within the bladed feldspar porphyry and the other alteration minerals are common as fracture fillings or in amygdules (Assessment Report 6034).

CAPSULE GEOLOGY

Chalcopyrite occurs in carbonate-filled fractures in the pyroclastic unit and as discrete disseminations in clasts of bladed feldspar porphyry in the tuffs. Pyrite commonly occurs with the chalcopyrite.

Mineralization within the bladed feldspar porphyry consists of chalcocite, bornite and chalcopyrite. Mineralization occurs in amygdules associated with calcite and in fracture fillings associated with epidote and pumpellyite (Assessment Report 6034). Chalcopyrite also occurs disseminated in the porphyry and is found with lesser amounts of chalcocite in fracture fillings. Minor malachite staining is associated with fractures and trace amounts of molybdenum has been noted (Assessment Report 6034).

Surface mineralization, approximately 1 kilometre to the north, is restricted to small shears and veinlets. These contain chalcopyrite, chalcocite and bornite associated with epidotization of these structures. This zone includes the siliceous zone referred to by Legun, which is located in a ridge notch and called the Bornite North zone (Open File 2001-2). These structures cut the updip extension of the rock types described in the ZD 76-1 diamond drill hole.

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EM OF *2001-2, 2001-18
EM FIELDWORK 1997, pp. 8b1 to 8b-10: 2000, pp. 75-82
EMPR ASS RPT 474, 650, 4593, 5255, *5256, *5662, *6034, 21064
EMPR GEM 1973-410
EMPR PF (In 094D General - *Canadian Superior Exploration Limited,
Maps from Company Files, c. 1973)
EMR MP CORPFILE (Texore Mines Ltd.)
GSC MAP 962A
GSC MEM 251, p. 62
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 2001/07/23

CODED BY: GSB
REVISED BY: ASL

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094D 038**

NATIONAL MINERAL INVENTORY: 094D10 Cu7

NAME(S): **A BORNITE NO. 1, NO. 2,**
A, SUSTUT PERIMETER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10E
BC MAP:
LATITUDE: 56 36 16 N
LONGITUDE: 126 42 09 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located approximately 1.5 kilometres west of the Sustut occurrence (094D 063) (Assessment Report 4625).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6275717
EASTING: 641031

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Pyrite Chalcocite
ASSOCIATED: Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu
SHAPE: Irregular
MODIFIER: Fractured
DIMENSION: STRIKE/DIP:
COMMENTS: Attitude of fractures which seem to control mineralization (Assessment Report 4625). TREND/PLUNGE: 095/90

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Polymictic Conglomerate
Breccia
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1973
SAMPLE TYPE: Rock
COMMODITY
Silver 42.0000 Grams per tonne
Copper 2.2600 Per cent
COMMENTS: Sample from area.
REFERENCE: Assessment Report 4625.

CAPSULE GEOLOGY

The A Bornite occurrence is located approximately 1.5 kilometres west of the Sustut deposit (094D 063) (Assessment Report 4625). The local and regional geology is similar to that of the Sustut deposit. The occurrence lies immediately to the southwest of the northwest trending Pinchi fault and is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) rocks. The rocks adjacent to the fault are polymictic conglomerates containing granitic clasts and clasts from Permian Asitka Group and Upper Triassic Takla Group rocks. Allogenic breccias and tuffs, which become more prominent to the southwest, are intercalated with the conglomerates. Mineralization consists of bornite with lesser chalcopyrite and pyrite. The sulphides occur with little or no gangue minerals and are found in thin veins and veinlets which appear to be fracture controlled. Vertical fractures trend 95 degrees and occur within the

CAPSULE GEOLOGY

breccias, conglomerates and tuffs.

A rock sample from this area assayed 2.26 per cent copper and 42 grams per tonne silver (Assessment Report 4625).

Two chalcocite and malachite showings occur, to the southeast near the peak of the ridge, within 1 kilometre (Assessment Report 4625).

Cross Lake Minerals Ltd. mapped and sampled the Sustut Perimeter property in 1997.

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT *4625, 25266
EMPR GEM 1973-444
EMPR PF (Map of A Claims, 1973, source unknown)
EMR CORPFILE (Golden Standard Mines Ltd.)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29
WWW <http://www.crosslakeminerals.com>

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/14

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 039**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUSTUT COAL**, GULF-SUSTUT

MINING DIVISION: Omineca

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094D10W 094D07W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 07 N
LONGITUDE: 126 57 23 W
ELEVATION: 1600 Metres

NORTHING: 6265673
EASTING: 625733

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the upper and lower coal zones, approximately 23 kilometres west-southwest of Sustut Peak (Coal Assessment Report 115).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal

MINERALIZATION AGE: Jurassic

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Fossil Fuel Sedimentary

TYPE: A03 Sub-bituminous coal

SHAPE: Irregular

MODIFIER: Folded Faulted

COMMENTS: Beds dip predominantly to the west 30 to 40 degrees, but southwest limbs of synclines are often steeper and overturned. The attitude of the roof of the upper coal zone is 128 63 SW and the floor, 136 83 SW

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Jurassic-Cretaceous

GROUP

Bowser Lake

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Claystone
Siltstone
Sandstone
Conglomerate
Coal

HOSTROCK COMMENTS: The coal occurs in the middle deltaic unit.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Bowser Lake

METAMORPHIC TYPE: Regional

RELATIONSHIP: Post-mineralization

GRADE: LVol Bituminous

COMMENTS: A thin coal seam from trench S-TR-80-05 contains medium volatile coal.

INVENTORY

ORE ZONE: TOTAL

REPORT ON: Y

CATEGORY: Inferred

YEAR: 1980

QUANTITY: 63000000 Tonnes

COMMODITY

GRADE

Coal

100.0000 Per cent

COMMENTS: The resource potential of raw coal.

REFERENCE: Coal Assessment Report 115.

CAPSULE GEOLOGY

The Sustut Coal occurrence is centered on the upper and lower coal zones, approximately 23 kilometres west-southwest of Sustut Peak (Coal Assessment Report 115).

The deposit is hosted in Middle to Upper Jurassic Bowser Lake Group sediments. To the east lies a thick succession of Jurassic to Triassic volcanic rocks of the Hazelton and Takla groups.

The structure of the area is dominated by thrust faults and overturned folds. Fold axes and fault traces generally trend northwest. Beds dip predominantly west, 30 to 40 degrees, but the southwest limbs of several synclines are steeper and often overturned. The folds are tight and commonly thrust faulted. Amplitudes vary from a few metres to several hundreds of metres. Anticlines tend to be closed, overturned and commonly broken while synclines are more open, though also frequently overturned. Two types of faults occur in the area; normal faults of considerable and negligible displacement and, most commonly, imbricate southwest-

CAPSULE GEOLOGY

dipping thrust faults.

Coal occurs in two major zones in the upper portion of the middle (deltaic) unit of the Bowser Lake Group. The coal is low volatile bituminous in rank and occurs interbedded with claystone, siltstone, sandstone and conglomerate. The coal appears to be limited to the Australia Lake cirque.

The lower coal zone is 6.58 metres thick and contains two seams 0.68 and 3.27 metres thick. The upper coal zone is 14.34 metres thick and includes three seams; 1.09 metres, 1.42 metres and 2.86 metres thick.

The coal is restricted in lateral extent along both strike and dip. Average analysis for the raw Sustut coal is 38.2 per cent ash, 15.81 per cent volatile matter, 42.86 per cent fixed carbon, 0.35 per cent sulphur and a calorific content of 7949 BTU per pound. The resource potential of the Sustut coal licenses is approximately 63 million tonnes of raw coal (Coal Assessment Report 115).

Two other coal zones occur to the south of the upper and lower coal zones. One coal zone, about 4 kilometres away, consists of 0.52 metres of 'poor coal' striking 132 degrees and dipping 64 degrees to the northeast. The second coal zone, approximately 7 kilometres away, strikes 110 degrees and dips 33 degrees to the southwest. The total thickness of this zone measures 0.92 metres. The rank, determined from a thin coal seam within this zone, is medium volatile bituminous coal.

BIBLIOGRAPHY

EMPR COAL ASS RPT *115
EMPR GEM 1980-569
EMPR P 1986-5, pp. 25-26
GSC BULL 270
GSC P 73-31; 76-29
GSC MEM 251
GSC MAP 962A
GSC OF 342

DATE CODED: 1985/07/24
DATE REVISED: 1991/07/15

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

1000 metres.

The main No. 1 through 9 coal seams all lie within the Coal Bowl area. The main No. 1 seam is very dirty, probably less than 1.0 metre thick, comprising 0.3 metre of coal. The maximum thickness of the main No. 2 seam is 3.90 metres, comprised of a 1.45 metre upper bench and a 1.55 metre thick lower bench. The seam thins to between 0.5 and 1.1 metres. The main No. 3 seam contains two benches and is locally split by additional thin shale and mudstone partings. The maximum thickness is 4.0 and 0.55 metres for the upper and lower benches respectively. The upper bench contains several shale and mudstone partings while the lower bench does not contain any. The main No. 4 seam is 0.6 to approximately 1.4 metres thick, thinning to the north. The main No. 5 seam, 5.0 metres thick, consists of carbonaceous shale with coal stringers. The main No. 6 seam is a 1.25-metre thick carbonaceous mudstone. The main No. 7 seam consists of two benches, upper and lower, 0.35 and 0.15 metres thick respectively. The main No. 8 seam is up to 1.3 to 3.55 metres thick. The main No. 9 seam, 4.1 metres thick, consists of an upper bench, 1.2-metres thick, and a lower bench, 2.10-metres thick.

The younger series of coals belongs to the Sustut Group and occurs in the southeast corner, the central and the northern parts of the Sustut block. These coals may be divided into 3 groups. The oldest coals, probably of Lower Tango Creek Formation age, are of high volatile bituminous "A" rank. The second group of coals continues from the oldest and are high volatile bituminous "B" in rank. The third group consists of three coal seams, Saiya A, B, and C, which are of sub-bituminous "A" rank, and belong to the Upper Tango Creek Formation.

BIBLIOGRAPHY

EMPR COAL ASS RPT *116, *117
EMPR P 1986-5, pp. 25-26
GSC BULL *270
GSC MEM 251
GSC OF 342
GSC P *73-31; 76-1A; 76-29
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/02

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 041**

NATIONAL MINERAL INVENTORY:

NAME(S): **SQUINGULA**, COAL 1-6

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 10 37 N
LONGITUDE: 127 11 00 W
ELEVATION: 1960 Metres

NORTHING: 6227259
EASTING: 612776

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of zone C, approximately 10.5 kilometres north of Motase Peak (Assessment Report 15355).

COMMODITIES: Gold Silver Copper Lead Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Tetrahedrite Galena Molybdenite Pyrite
ASSOCIATED: Magnetite
ALTERATION: Silica Calcite Sericite
ALTERATION TYPE: Silicific'n Carbonate Sericitic Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE: Jurassic Unknown
GROUP: Bowser Lake
FORMATION: Undefined Formation
IGNEOUS/METAMORPHIC/OTHER: Unnamed/Unknown Informal

LITHOLOGY: Granodiorite
Meta Sediment/Sedimentary
Greywacke
Argillite
Conglomerate
Granodiorite Feldspar Porphyry Dike
Shale

HOSTROCK COMMENTS: The sediments are possibly Late Oxfordian (see 094D 118). The granodiorite is possibly related to the Eocene Kastberg Intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Skeena Ranges
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY: Silver 115.0000 Grams per tonne
Gold 23.5000 Grams per tonne

REFERENCE: Assessment Report 14938.

CAPSULE GEOLOGY

The Squingula occurrence, located on Zone C, is approximately 10.5 kilometres north of Motase Peak (Assessment Report 15355). This occurrence consists of three zones; Zone A is 600 metres northeast of Zone C and Zone B is 400 metres west of Zone C (Assessment Report 15355).

The host rocks are greywackes, argillites and minor conglomerates (and their metamorphic equivalents) of the Middle to Upper Jurassic Bowser Lake Group. These rocks are intruded by granodiorites and granodiorite feldspar porphyry dykes possibly related to and contemporaneous with the Eocene Kastberg Intrusions (Assessment Report 14938).

The strata, folded near the intrusion, strikes northwest and dips 40 to 60 degrees southwest. Shear zones, cutting through all rock types, strike 60 to 80 degrees and 160 to 180 degrees.

CAPSULE GEOLOGY

Minor to intense carbonatization, silicification, sericitization and argillic alteration occur in the rocks. Intense silicification is associated with the shear zones.

Mineralization is associated with shear zones cutting intrusions and metasediments. Mineralization consists of chalcopyrite, galena, tetrahedrite and abundant (up to 10 per cent) pyrite. Higher values of gold and silver are associated with the silicified and sheared contact between the granodiorite and the metasediments. Porphyry molybdenum mineralization is also associated with the intrusions.

Scattered occurrences of chalcopyrite and galena occur throughout an area with an approximate radius of 0.75 kilometres around Zone C.

Zone A is an altered contact between silicified meta-argillite and granodiorite. The zone trends southeast, is approximately 25 metres in length and 1 metre in width.

Zone B is similar to Zone A, but the granodiorite hosts minor magnetite.

Zone C is hosted entirely by argillite and shale which strike southwest and dip 20 to 60 degrees northwest. Two sheared and altered zones are present but lack continuity.

One of the best samples collected, from a silicified shear contact near Zone A, assayed 23.5 grams per tonne gold and 115 grams per tonne silver (Assessment Report 14938).

BIBLIOGRAPHY

EMPR ASS RPT 14077, *14938, *15355
EMPR EXPL 1985-C344; 1986-C382-383
EMPR OF 2001-18
EMPR PF (In 094D General - *Canadian Superior Exploration Limited,
Maps from Company Files, c. 1973)
GSC MEM 251
GSC OF 342; 2322
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/20

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 042**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOT 2**, NORTH ZONE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 05 14 N
LONGITUDE: 127 08 16 W
ELEVATION: 1500 Metres

NORTHING: 6217350
EASTING: 615873

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the North zone, approximately 9 kilometres northwest of Motase Lake (Assessment Report 18361).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Unknown
COMMENTS: Unspecified types of base metal mineralization.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epithermal
TYPE: I02 Intrusion-related Au pyrrhotite veins L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Bowser Lake	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Unnamed/Unknown Formation	
Eocene			Kastberg Intrusions

LITHOLOGY: Granodiorite Feldspar Porphyry Sill
Monzonitic Dike
Sediment/Sedimentary
Andesite

HOSTROCK COMMENTS: Intrusive rocks are possibly the Kastberg Intrusions or are related to the Cretaceous Bulkley Intrusions which occur further to the south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Bowser Lake
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: VEINS REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab
COMMODITY
Silver 56.0000 Grams per tonne
Gold 4.7400 Grams per tonne
COMMENTS: Mineralized quartz veins.
REFERENCE: Assessment Report 16305.

CAPSULE GEOLOGY

The Mot 2 occurrence is located approximately 9 kilometres northwest of Motase Lake (Assessment Report 18361). The regional geology is similar to the Mot 1 occurrence (refer to 094D 001). The area is located along the eastern extent of Middle to Upper Jurassic Bowser Lake Group clastic sediments. Andesitic volcanics of the Lower to Middle Jurassic Hazelton Group occur in the sediments. These rocks are intruded possibly by the Eocene Kastberg Intrusions or by rocks related to the Cretaceous Bulkley Intrusions, which occur further to the south. The older intrusion is represented by an altered granodiorite feldspar porphyry sill, 50 to 80 metres thick. The younger intrusions are monzonitic dykes and sills which intrude all the older units. Precious and base metal mineralization in the area appears to be spatially related to the intrusions. Mineralized quartz veins in granodiorite contain values up to 4.74 grams per tonne gold and 56.0 grams per tonne silver (Assessment Report 16305). Most samples of the quartz veins assayed less than 0.8 gram per tonne gold.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 358
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR AR 1962-9
EMPR ASS RPT *8844, 10378, *10432, *11630, *11631, *15392, *16305,
17339, *18361, *18390, 19610, 20505
EMPR EXPL 1980-418,419; 1981-275; 1983-469; 1987-C323
EMPR GEM *1973-403
EMPR OF 2001-18
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1988/01/08
DATE REVISED: 1991/08/28

CODED BY: GJP
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 043**

NATIONAL MINERAL INVENTORY: 094D10 Cu1

NAME(S): **DEWAR PEAK** BARN 1-42, BEAR 1-16,
ICE 1-3, NIVEN 1-48, PIKE 1-22,
SNO 1-24

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6288611
EASTING: 634133

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:
LATITUDE: 56 43 20 N
LONGITUDE: 126 48 29 W
ELEVATION: 1820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of showing #1 located on the southwest slope of Dewar Peak
(Assessment Report 4710).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcocite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Banded Tuff
Cherty Argillite
Banded Cherty Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Dewar Peak occurrence is located on the southwest slope of Dewar Peak (showing #1, Assessment Report 4710).

The regional and local geology is similar to that of the Barn showing (refer to 094D 084).

The showing is hosted in Upper Triassic Takla Group banded purple tuffs, cherty argillites and banded cherty argillites. Bedding strikes approximately east-west and dips moderately to the south.

Mineralization consists of chalcocite and malachite within a fault, predominantly cutting purple tuffs.

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT *4710
EMPR GEM 1973-446
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1991/07/14
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 044**

NATIONAL MINERAL INVENTORY:

NAME(S): **ICE, DEW**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 43 20 N
LONGITUDE: 126 47 16 W
ELEVATION: 1790 Metres

NORTHING: 6288651
EASTING: 635374

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing #2, located 1.22 kilometres west of the Dewar Peak occurrence (094D 043) (Assessment Report 4710).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcocite Bornite
ASSOCIATED: Quartz
ALTERATION: Malachite Epidote Chlorite
ALTERATION TYPE: Oxidation Epidote Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Undefined Formation	
Upper Triassic	Takla	Savage Mountain	

LITHOLOGY: Cherty Limestone
Siliceous Volcanic
Lapilli Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Ice showing is located 1.2 kilometres east of the Dewar Peak occurrence (094D 043) (showing #2, Assessment Report 4710).

The regional and local geology is similar to that of the Barn showing (refer to 094D 084).

Mineralization occurs near a major northwest-trending fault, which separates the Asitka Group from the Upper Triassic Takla Group.

Mineralization consists of chalcocite and bornite within Permian Asitka Group cherty limestones.

Malachite occurs in a minor quartz vein approximately 300 metres to the west. The vein cuts siliceous volcanics and lapilli tuffs of the Upper Triassic Savage Mountain Formation (Takla Group) (Assessment Report 13001). Epidote veining and chlorite amygdules are common in the surrounding mafic to intermediate volcanics.

BIBLIOGRAPHY

EMPR ASS RPT *4710, *13001
EMPR EXPL 1984-347
GSC OF 342
GSC MEM 251
GSC P 73-31; 74-1 Part A; 76-29
GSC MAP 962A

DATE CODED: 1991/07/14
DATE REVISED: 1991/09/26

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 045**

NATIONAL MINERAL INVENTORY:

NAME(S): **PIKE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 42 57 N
LONGITUDE: 126 49 09 W
ELEVATION: 1800 Metres

NORTHING: 6287878
EASTING: 633476

LOCATION ACCURACY: Within 500M

COMMENTS: Showing #3, located approximately 1 kilometre southwest of the Dewar Peak occurrence (094D 043) (Assessment Report 4710).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Bornite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: E04 Sediment-hosted Cu

D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Argillite
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Pike occurrence is located approximately 1 kilometre southwest of the Dewar Peak showing (094D 043) (Assessment Report 4710).

The regional and local geology is similar to that of the Barn showing (refer to 094D 084).

Disseminated bornite and malachite are hosted in purple argillites and tuffs of the Upper Triassic Savage Mountain Formation (Takla Group).

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT *4710
EMPR OF 2001-18
EMPR PF (Meyer, W. (1973): Summary Report on Pike, Fire and Carlos Claims for Highhawk Mines Ltd. and Geology Map)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1991/07/14
DATE REVISED: 1992/06/04

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 046**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOOSEVALE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 41 14 N
LONGITUDE: 126 49 34 W
ELEVATION: 1600 Metres

NORTHING: 6284681
EASTING: 633152

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showings #5 and #6, approximately 1.5 kilometres east of Moosevale Creek (Assessment Report 4710).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite
COMMENTS: Trace amounts of molybdenite occurs in quartz veins near porphyry dykes.

ASSOCIATED: Quartz
ALTERATION: Malachite

ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: E04 Sediment-hosted Cu
L04 Porphyry Cu ± Mo ± Au

G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE: Upper Triassic
GROUP: Takla

FORMATION: Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Tuff
Cherty Limestone
Quartz Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Moosevale occurrence is approximately 1.5 kilometres east of Moosevale Creek (Assessment Report 4710). The northern showing (#5) is approximately 200 metres from the southern showing (#6).

The regional and local geology is similar to that of the Barn occurrence (refer to 094D 084).

The northern showing (#5) occurs in a shear zone cutting tuffs and cherty limestones, most likely of the Upper Triassic Takla Group. Chalcopyrite and malachite occur in sheared tuffs and chalcopyrite also occurs in cherty limestones.

At the southern showing (#6), chalcopyrite and trace amounts of molybdenite occur in a quartz vein near two east-west trending quartz feldspar porphyry dykes.

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT *4710
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1991/07/14
DATE REVISED: 1992/06/04

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 047**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAR**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 41 31 N
LONGITUDE: 126 47 55 W
ELEVATION: 1800 Metres

NORTHING: 6285260
EASTING: 634820

LOCATION ACCURACY: Within 500M

COMMENTS: Showing #7, approximately 4 kilometres south of Dewar Peak (Assessment Report 4710).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal
TYPE: D03 Volcanic redbed Cu

L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Augite Porphyry
Quartz Feldspar Porphyry Dike

HOSTROCK COMMENTS: The host rocks could belong to either the Savage Mountain Formation or the Moosevale Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Bear occurrence is located approximately 4 kilometres south of Dewar Peak (showing #7, Assessment Report 4710).

The regional and local geology is similar to that of the Barn showing (refer to 094D 084).

The Bear showing is hosted in either the Moosevale Formation or the Savage Mountain Formation of the Upper Triassic Takla Group. The area is predominantly underlain by augite porphyry. Two quartz-feldspar porphyry dykes cut the augite porphyry, one trends east-west and the other north-south.

Malachite occurs within sheared augite porphyry.

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT *4710
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1991/07/14
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 048**

NATIONAL MINERAL INVENTORY:

NAME(S): **BARN 8**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 42 03 N
LONGITUDE: 126 51 45 W
ELEVATION: 1420 Metres

NORTHING: 6286126
EASTING: 630877

LOCATION ACCURACY: Within 500M

COMMENTS: Showing #8, approximately 5 kilometres to the southwest of Dewar Peak (Assessment Report 4710).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Augite Porphyry
Quartz Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Barn 8 occurrence is located approximately 5 kilometres to the southwest of Dewar Peak (showing #8, Assessment Report 4710).

The regional and local geology is similar to that of the Barn showing (refer to 094D 084).

The occurrence is hosted in Upper Triassic Savage Mountain Formation (Takla Group) volcanics. The area is predominantly underlain by augite porphyry. A northeast-trending quartz feldspar porphyry dyke occurs near the showing.

The mineralization consists of disseminated chalcopyrite and malachite in augite porphyry.

BIBLIOGRAPHY

EMPR ASS RPT *4710
GSC OF 342
GSC MEM 251
GSC P 74-1 Part A; 76-29
GSC MAP 962A

DATE CODED: 1991/07/14
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **MENARD PASS**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 43 46 N
LONGITUDE: 126 34 00 W
ELEVATION: 1920 Metres

NORTHING: 6289913
EASTING: 648873

LOCATION ACCURACY: Within 500M

COMMENTS: The westernmost molybdenite occurrence, located approximately 11 kilometres northeast of Savage Mountain (Assessment Report 4254).

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Volcanic
Quartz Porphyry
Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

CAPSULE GEOLOGY

The Menard Pass occurrence is located approximately 11 kilometres northeast of Savage Mountain (Assessment Report 4254).

The regional and local geology is similar to that of the Menard Creek occurrence (094D 005), located approximately 2.5 kilometres to the north.

The area is underlain by Upper Triassic Savage Mountain Formation (Takla Group) volcanics. These are bounded by the Moose Valley fault to the west and by the north-northwest trending Ingenika fault to the east. An Early Jurassic quartz monzodiorite stock lies just to the north of the occurrence.

Molybdenite occurs at this location disseminated in Savage Mountain volcanics. Another molybdenite showing, with associated pyrite, is located approximately 1.75 kilometres to the southeast in quartz monzonite (Assessment Report 2349).

Two copper showings are hosted within a quartz porphyry. One is located approximately 400 metres to the northeast and the other, approximately 1 kilometre to the southeast of this occurrence.

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EMPR AR 1966-82; 1967-89; 1968-118
EMPR ASS RPT 991, *2349, *4254
EMPR GEM 1969-104; *1973-434
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1991/08/01
DATE REVISED: 1992/06/09

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 050**

NATIONAL MINERAL INVENTORY:

NAME(S): **TJ**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 27 31 N
LONGITUDE: 126 40 11 W
ELEVATION: 1630 Metres

NORTHING: 6259558
EASTING: 643593

LOCATION ACCURACY: Within 500M

COMMENTS: Showing #5, approximately 6 kilometres east-northeast of the confluence of Red Creek and the Sustut River (Assessment Report 4892).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite Quartz Calcite
ALTERATION: Chrysocolla
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu
DIMENSION: 9 x 6 Metres
COMMENTS: Mineralization outcrops over a 9 by 6 metre area.

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Dewar

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Pyroclastic Breccia
Tuff
Sandstone
Argillite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Rock

COMMODITY

GRADE

Copper

1.4000

Per cent

REFERENCE: Assessment Report 4892, Map 2 - Copper Geochemistry.

CAPSULE GEOLOGY

The TJ occurrence is located approximately 6 kilometres east-northeast of the confluence of Red Creek and the Sustut River (showing #5, Assessment Report 4892).

The local and regional geology is similar to that of the Tie occurrence (refer to 094D 089).

The area is underlain by Upper Triassic Dewar Formation (Takla Group) tuffs, sandstones, argillites, limestones and breccias.

Chalcopyrite, chrysocolla and pyrite are disseminated in quartz-carbonate filled pyroclastic breccias. The mineralization outcrops over an area of about 6 by 9 metres. A rock sample from this zone assayed 1.4 per cent copper (Assessment Report 4892).

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EMPR ASS RPT *4892
EMPR GEM 1973-406
GSC OF 342
GSC MEM 251
GSC P 76-29

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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BIBLIOGRAPHY

GSC MAP 962A

DATE CODED: 1991/08/07
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 051**

NATIONAL MINERAL INVENTORY:

NAME(S): **JAN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 26 17 N
LONGITUDE: 126 40 57 W
ELEVATION: 1580 Metres

NORTHING: 6257244
EASTING: 642883

LOCATION ACCURACY: Within 500M

COMMENTS: Showing #8, approximately 6 kilometres east-southeast of the confluence of Red Creek and the Sustut River (Assessment Report 4892).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
ALTERATION: Malachite Silica
ALTERATION TYPE: Oxidation Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Moosevale	

LITHOLOGY: Pyroclastic
Chert

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
COMMODITY: Copper
GRADE: 0.4800 Per cent

YEAR: 1973

COMMENTS: Rock sample of mineralized jasper-bearing pyroclastic rock.
REFERENCE: Assessment Report 4892, Map 2 - Copper Geochemistry.

CAPSULE GEOLOGY

The Jan occurrence is located approximately 6 kilometres east-southeast of the confluence of Red Creek and the Sustut River (showing #8, Assessment Report 4892).

The local and regional geology is similar to that of the Tie occurrence (refer to 094D 089).

The area is underlain by pyroclastics and cherts of the Upper Triassic Moosevale Formation (Takla Group).

Chalcopyrite and pyrite are disseminated in a jasper-bearing pyroclastic unit. This unit is stratigraphically above strongly contorted and sheared chert beds. A rock sample assayed 0.48 per cent copper (Assessment Report 4892).

Approximately 600 metres to the southeast, the same jasper-bearing pyroclastic unit occurs near a strongly sheared and silicified zone. Malachite and pyrite occur disseminated within the pyroclastic unit.

BIBLIOGRAPHY

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GSC OF 342
GSC MEM 251
GSC P 76-29

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
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PAGE: 369
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 962A

DATE CODED: 1991/08/08
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 052**

NATIONAL MINERAL INVENTORY:

NAME(S): **PARK 2**, PARK, WEST RIDGE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 27 47 N
LONGITUDE: 126 34 16 W
ELEVATION: 1880 Metres

NORTHING: 6260263
EASTING: 649651

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 14 kilometres due south of Sustut Peak, on the ridge west of the A462 occurrence (094D 102) (Assessment Report 4855).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcocite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Siliceous Tuff
Lapilli Tuff
Ash Tuff
Andesitic Vesicular Flow
Agglomerate
Quartz Feldspar Porphyry Sill
Ash Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 360.0000 Grams per tonne
Copper 5.4000 Per cent
COMMENTS: Highest values from grab samples of mineralized talus and fracture zones on claim.
REFERENCE: Assessment Report 21856.

CAPSULE GEOLOGY

The Park 2 occurrence is located approximately 14 kilometres due south of Sustut Peak, on the ridge 1.5 kilometres northwest of the A462 occurrence (094D 102) (Assessment Report 4855).

The regional and local geology is similar to that of the A462 occurrence.

Chalcocite occurs within shear zones, and other fracture features, cutting lapilli tuffs, ash tuffs, andesitic vesicular flows, agglomerates and quartz feldspar porphyry sills of the Lower Jurassic Telkwa Formation (Hazelton Group). Mineralization is found scattered along the entire ridge.

One of the best samples, from siliceous tuff, assayed 1.44 per cent copper and 80 grams per tonne silver (Assessment Report 5402, page 62). Grab samples from mineralized talus boulders and fracture zones on the Park 2 claim assayed up to 5.4 per cent copper and 360 grams per tonne silver (Assessment Report 21856).

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EMPR ASS RPT *4855, *5402, *21856
EMPR GEM 1974-298
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/08/08
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 053**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAST RIDGE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 26 53 N
LONGITUDE: 126 31 59 W
ELEVATION: 1530 Metres

NORTHING: 6258678
EASTING: 652055

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 16 kilometres south-southeast of Sustut Peak, on the ridge east of the A462 occurrence (094D 102) (Assessment Report 4855).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ASSOCIATED: Calcite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

COMMENTS: A vertical, 0.61-metre wide, shear zone trending 106 degrees contains malachite-stained calcite fracture fillings (Assessment Report 4855).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Pyroclastic
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The East Ridge occurrence is located approximately 16 kilometres south-southeast of Sustut Peak, on the ridge east of the A462 occurrence (094D 102) (Assessment Report 4855).

The regional and local geology is similar to that of the A462 occurrence.

Fracture surfaces display prominent malachite-staining in a shear zone. The shear zone, 0.61-metre wide, is vertical and trends 106 degrees (Assessment Report 4855). The shear zone contains calcite fracture fillings and cuts Lower Jurassic Telkwa Formation (Hazelton Group) pyroclastics and volcanics.

BIBLIOGRAPHY

EMPR ASS RPT *4855, 4921, 5402
EMPR GEM 1973-404
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/08/08
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 054**

NATIONAL MINERAL INVENTORY:

NAME(S): **POND**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 30 45 N
LONGITUDE: 126 36 50 W
ELEVATION: 1720 Metres

NORTHING: 6265672
EASTING: 646825

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 5 kilometres southeast of the confluence of Willow Creek and the Sustut River (Assessment Report 4855).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcocite Copper
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic
Pyroclastic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Pond occurrence is located approximately 5 kilometres southeast of the confluence of Willow Creek and the Sustut River (Assessment Report 4855).

The regional geology is similar to that of the A462 occurrence (094D 102), which lies approximately 5 kilometres to the south-southeast.

Mineralization consists of chalcocite and native copper in a malachite-stained quartz-calcite vein. The vein is hosted within Lower Jurassic Telkwa Formation (Hazelton Group) volcanics and pyroclastics.

BIBLIOGRAPHY

EMPR ASS RPT *4855, 4921, 5402
EMPR GEM 1973-407; 1974-298
EMPR OF 2001-18
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1991/08/08
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 055**

NATIONAL MINERAL INVENTORY:

NAME(S): **RED COPPER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 24 15 N
LONGITUDE: 126 32 47 W
ELEVATION: 1460 Metres

NORTHING: 6253765
EASTING: 651408

LOCATION ACCURACY: Within 500M

COMMENTS: Located just north of the Asitka River, approximately 17 kilometres east of the confluence of the Asitka and Sustut rivers (Assessment Report 4855).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Bornite Chalcocite Chalcopyrite

COMMENTS: Possibly native copper present.

ALTERATION: Malachite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear

CLASSIFICATION: Hydrothermal

TYPE: D03 Volcanic redbed Cu

DIMENSION:

STRIKE/DIP: 140/70E

TREND/PLUNGE:

COMMENTS: The general strike and dip of small shears (Assessment Report 4855).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Porphyritic Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Red Copper occurrence is located just north of the Asitka River, approximately 17 kilometres east of the confluence of the Asitka and Sustut rivers (Assessment Report 4855).

The occurrence is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) sheared and porphyritic andesite. The mineralized shears are related to regional east-trending faults in the area (Assessment Report 4855). The smaller shears generally strike 140 degrees and dip 70 degrees to the east.

Mineralization consists primarily of bornite with lesser chalcocite, chalcopyrite and, possibly, native copper. Malachite staining commonly marks the shear zones.

A "fist" size pod in a minor shear zone, cutting grey-brown andesite, contained approximately 20 per cent bornite (Assessment Report 4855).

BIBLIOGRAPHY

EMPR ASS RPT *4855
GSC MEM *251, p. 63
GSC OF 342
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/08/12
DATE REVISED: 1992/06/06

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 056**

NATIONAL MINERAL INVENTORY: 094D7 Cu1

NAME(S): **HUMPY, A**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 25 46 N
LONGITUDE: 126 39 01 W
ELEVATION: 2100 Metres

NORTHING: 6256353
EASTING: 644902

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 9 kilometres east-southeast of the confluence of Red Creek and the Sustut River (Assessment Report 4855).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite
ASSOCIATED: Quartz Calcite
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Andesite Tuff

HOSTROCK COMMENTS: The host rock is of either the Dewar or Moosevale formations.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Humpy occurrence is located approximately 9 kilometres east-southeast of the confluence of Red Creek and the Sustut River (Assessment Report 4855).

The regional geology is similar to that of the Willow Creek occurrence (refer to 094D 016).

The showing is hosted within andesitic tuffs of either the Upper Triassic Dewar or Moosevale formations (Takla Group). The andesitic tuff is grey and medium-grained.

Mineralization occurs as chalcopyrite and chalcocite in small malachite-stained shear zones or in quartz and calcite veins of variable size.

Rocks surrounding the shear zone are considerably more siliceous. One of the shear zones is mineralized over a strike length of 304.8 metres (Assessment Report 4855).

BIBLIOGRAPHY

EMPR ASS RPT *4855
GSC MEM 251
GSC OF 342
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/08/12
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 057**

NATIONAL MINERAL INVENTORY: 094D10 Cu7

NAME(S): **A CHALCOCITE NO. 1, NO. 2,**
A, SUSTUT PERIMETER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10E
BC MAP:
LATITUDE: 56 34 40 N
LONGITUDE: 126 42 53 W
ELEVATION: 1660 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located approximately 8 kilometres west of Sustut Peak (Assessment Report 4625).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6272725
EASTING: 640380

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcocite
ASSOCIATED: Quartz Calcite Epidote
ALTERATION: Malachite Epidote
ALTERATION TYPE: Oxidation Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Bedded Tuff
Lapilli Tuff
Feldspar Porphyry Sill

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
YEAR: 1973
CATEGORY: Assay/analysis
SAMPLE TYPE: Rock
COMMODITY
Silver GRADE 22.0000 Grams per tonne
Copper 1.5000 Per cent
COMMENTS: Rock sample from the area.
REFERENCE: Assessment Report 4625.

CAPSULE GEOLOGY

The A Chalcocite occurrence is located approximately 8 kilometres west of Sustut Peak (Assessment Report 4625). The regional geology is similar to that of the Sustut deposit (refer to 094D 063) and the local geology is similar to that of the A Bornite occurrence (refer to 094D 038). The occurrence lies within Lower Jurassic Telkwa Formation (Hazelton Group) bedded and lapilli tuffs. A west-trending feldspar porphyry sill intrudes these rocks. Mineralization consists of chalcocite within malachite-stained, epidote, calcite and quartz veins, in fracture fillings and in sheared tuffs. The feldspar porphyry sill is associated with the local mineralization and contains minor malachite-stained chalcocite filled fractures. Epidote alteration is commonly found within the country rocks around the larger veins. A rock sample from this area assayed 1.5 per cent copper and 22 grams per tonne silver (Assessment Report 4625). Cross Lake Minerals Ltd. mapped and sampled the Sustut Perimeter property in 1997.

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RUN TIME: 11:51:27

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EMPR GEM 1973-444
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29
WWW <http://www.crosslakeminerals.com/>
http://www.infomine.com/index/properties/SUSTUT_PERIMETER.html

DATE CODED: 1991/08/12
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 058**

NATIONAL MINERAL INVENTORY: 094D3 Cu2

NAME(S): **MAGNUM**, D, A,
B

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 13 35 N
LONGITUDE: 127 02 31 W
ELEVATION: 1630 Metres

NORTHING: 6233001
EASTING: 621396

LOCATION ACCURACY: Within 500M
COMMENTS: The D showing, approximately 3 kilometres northwest of Mount Patcha (Property File - Mouritsen, S.A., 1969).

COMMODITIES: Copper Lead Silver

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Chalcocite Galena Pyrite
ALTERATION: Malachite Azurite Chlorite Silica
ALTERATION TYPE: Oxidation Chloritic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Volcanic Tuff
Argillaceous Tuff
Volcanic Flow
Argillite
Andesitic Pyroclastic
Diorite Dike
Quartz Feldspar Porphyry

HOSTROCK COMMENTS: The dykes may be contemporaneous and related to the Eocene Kastberg Intrusions (Property File - Mouritsen, S.A. 1969).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1969
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 32.9000 Grams per tonne
Copper 1.8400 Per cent
COMMENTS: Sample from blasted surface cut over 8.23 metres at the D showing.
REFERENCE: Property File - Mouritsen, S.A. 1969.

CAPSULE GEOLOGY

The Magnum occurrence, located on the D showing, is approximately 3 kilometres northwest of Mount Patcha (Property File - Mouritsen, S. A., 1969). The B showing is 1 kilometre to the west and the A showing is 1 kilometre to the north of the D showing.

The showings are hosted in Lower Jurassic Telkwa Formation (Hazelton Group) argillaceous tuffs, volcanic flows, argillites, and andesitic pyroclastics. Intruding these rocks are diorite dykes which are possibly related to and contemporaneous with the Eocene Kastberg Intrusions (Property File - Mouritsen, S.A., 1969).

Faulting in the area generally trends west to north-northwest and has resulted in numerous fractures within the country rocks. A large west striking fault runs through the middle of the property and is informally named the "main fault". Alteration is most pervasive near the main fault and is mainly chloritization and silicification.

The A showing consists of bornite and chalcopyrite with minor

CAPSULE GEOLOGY

pyrite and galena, in heavily fractured and malachite-stained volcanic tuffs.

The B showing consists of a zone of malachite-staining along the border of a quartz feldspar porphyry stock.

The D showing consists of bornite and minor chalcopyrite hosted in malachite-stained fractures and veins. The fractures and veins are associated with the main fault.

Samples from blasted surface cuts from the D showing averaged 1.84 per cent copper and 32.9 grams per tonne silver over 8.23 metres. Twelve, 15-metre holes were drilled in a 300 by 100 metre area and gave an arithmetic average of 7.13 grams per tonne silver and 0.383 per cent copper (Property File - Mouritsen, S.A., 1969).

BIBLIOGRAPHY

EMPR GEM 1970-186
EMPR OF 2001-18
EMPR PF (*Mouritsen, S. A. (1969) Report on Bear Lake Project, Copper
Magnum Groups for Roosevelt Mines Limited)
EMR CORPFILE (Roosevelt Mines Ltd.)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/06/05

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 059**

NATIONAL MINERAL INVENTORY:

NAME(S): **GALENA RIDGE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 30 12 N
LONGITUDE: 126 17 01 W
ELEVATION: 1665 Metres

NORTHING: 6265407
EASTING: 667182

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 2.5 kilometres due south of Goldway Peak (Assessment Report 13697).

COMMODITIES: Gold Lead Copper

MINERALS

SIGNIFICANT: Pyrite Galena Chalcopyrite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Triassic-Jurassic

Takla

Unnamed/Unknown Formation

LITHOLOGY: Volcaniclastic
Andesitic Volcaniclastic
Crystal Tuff
Lapilli Tuff
Andesite Flow
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Quesnel

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1985

SAMPLE TYPE: Grab

COMMODITY

GRADE

Gold

4.0000

Grams per tonne

REFERENCE: Assessment Report 13697.

CAPSULE GEOLOGY

The Galena Ridge occurrence is located approximately 2.5 kilometres due south of Goldway Peak (Assessment Report 13697).

The area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanics. These volcanics are bounded to the east by the north-trending Dortatelle fault and to the west by the Ingenika fault. Locally, the area is underlain by andesitic volcaniclastics, predominantly crystal and lapilli tuffs, interlayered with minor andesite flows. Minor feldspar porphyry dykes intrude the volcaniclastics. The general stratigraphic trend is north-south but this is complicated by intense polyphase deformation. The regional metamorphic grade is greenschist facies, locally overprinted by biotite grade thermal metamorphism (Assessment Report 13697).

Mineralization consists of a quartz vein containing 10 per cent pyrite, 5 per cent galena, minor chalcopyrite and up to 4 grams per tonne gold (Assessment Report 13697). The vein is approximately 30 centimetres thick and cuts the volcaniclastics.

BIBLIOGRAPHY

EMPR ASS RPT *13697
GSC OF 342
GSC MEM 251
GSC P 76-29

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 381
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 962A

DATE CODED: 1991/10/15
DATE REVISED: 1992/06/05

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 060**

NATIONAL MINERAL INVENTORY: 094D1 Cr1

NAME(S): **CARRUTHERS CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D01E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 13 11 N
LONGITUDE: 126 12 25 W
ELEVATION: 1100 Metres

NORTHING: 6234044
EASTING: 673181

LOCATION ACCURACY: Within 500M

COMMENTS: Located near Carruthers Creek, approximately 7.5 kilometres upstream from its confluence with the Omineca River (Property File - Canadian Superior Exploration Ltd., Maps from Company Files, c. 1973).

COMMODITIES: Chromium

MINERALS

SIGNIFICANT: Chromite
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Pennsylvan.-Permian
Paleozoic-Mesozoic

GROUP

Cache Creek

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Ultramafic
Serpentinite
Serpentinized Peridotite
Greenstone

HOSTROCK COMMENTS: The age of the ultramafic is Late Paleozoic to Triassic(?) (Geological Survey of Canada, Open File 342).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Cache Creek

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Carruthers Creek occurrence is located near Carruthers Creek, approximately 7.5 kilometres upstream from its confluence with the Omineca River (Property File - Canadian Superior Exploration Ltd., Maps from Company Files, c. 1973).

The occurrence is hosted in an Alpine-type ultramafic intrusion of Late Paleozoic and Triassic(?) age (Geological Survey of Canada Open File 342). The ultramafic is composed of serpentinite, serpentinized peridotite and greenstone. This intrudes Pennsylvanian to Permian Cache Creek Group siliceous phyllites, metacherts and marbles.

Chromite mineralization occurs as discrete grains, up to 13 millimetres in diameter, within the ultramafic intrusion (Geological Survey of Canada Memoir 251).

BIBLIOGRAPHY

EMPR PF (In 094D General - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MEM *251, p. 64
GSC MAP *962A
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/06/09

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 061**

NATIONAL MINERAL INVENTORY: 094D3 Cu1

NAME(S): **JAKE NORTH**, MOTASE A, IN,
JKB 1-20

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D03W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 14 09 N
LONGITUDE: 127 19 23 W
ELEVATION: 1200 Metres

NORTHING: 6233592
EASTING: 603944

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of a cluster of known mineralized showings, approximately 19 kilometres northwest of Motase Peak (Assessment Report 16838).

COMMODITIES: Copper Silver Molybdenum Lead Zinc
Gold

MINERALS

SIGNIFICANT: Chalcocite Copper Chalcanthite Bornite Molybdenite
Sphalerite Galena Pyrite Chalcocite

COMMENTS: Chalcocite is possibly present.

ASSOCIATED: Chalcedony Quartz Ankerite
ALTERATION: Silica Jarosite Malachite Hematite Azurite
Sericite Pyrite

ALTERATION TYPE: Potassic Argillic Propylitic Silicific'n Sericitic
Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Stockwork
CLASSIFICATION: Porphyry Hydrothermal Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au I05 Polymetallic veins Ag-Pb-Zn±Au
H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Tabular
MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Jurassic Bowser Lake Unnamed/Unknown Formation Unnamed/Unknown Informal
Unknown

LITHOLOGY: Mudstone
Siltstone
Sandstone
Wacke
Conglomerate
Biotite Plagioclase Porphyry
Biotite Hornblende Plagioclase Porphyry

HOSTROCK COMMENTS: Intrusions are related to and contemporaneous with either the Eocene Kastberg Intrusions or the Cretaceous Bulkley Intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges

TERRANE: Bowser Lake

METAMORPHIC TYPE: Contact

RELATIONSHIP: Syn-mineralization

GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	8.4000	Grams per tonne
Gold	2.2500	Grams per tonne
Copper	0.1600	Per cent

COMMENTS: One of the best samples analysed from a location along an unnamed tributary of the Squingula River.

REFERENCE: Assessment Report 16838.

INVENTORY

ORE ZONE: ROCK

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1988

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

33.0000

Grams per tonne

Gold

0.3000

Grams per tonne

Lead

1.2500

Per cent

COMMENTS: Sample from area.

REFERENCE: Assessment Report 16838.

CAPSULE GEOLOGY

The Jake North occurrence is located approximately 19 kilometres northwest of Motase Peak (Assessment Report 16838).

The regional geology is similar to that of the Tommy Jack occurrence (094D 031).

The Jake claims are underlain by interbedded mudstones, siltstones, sandstones, wackes and minor conglomerates of the Middle to Upper Jurassic Bowser Lake Group. These grey to black sediments commonly contain plant fossils, which occur as black wavy laminae. The sediments are intruded by dykes and stocks of biotite-plagioclase porphyry or biotite-hornblende-plagioclase porphyry. The sediments have been hornfelsed around the intrusions. The dykes have a general northeast trend and swarm over a distance of 7 kilometres, pinching to the south and covered by overburden to the north. The dykes are related to, and contemporaneous with, either the Cretaceous Bulkley Intrusions, which occur further to the south, or the Eocene Kastberg Intrusions (Assessment Report 16838). The sediments are generally flat-lying to gently dipping and are folded. The folds have vertical axial planes and the fold axes plunge gently to the south-southeast.

Sulphide mineralization is controlled by the large porphyry system developed by the dyke swarm. The mineralization can be divided into an early, middle and late hypogene stage and a supergene stage.

The early hypogene stage is characterized by copper-molybdenum sulphides in an intensely pyritized area. The best mineralization appears to be associated with potassic alteration and consists of chalcopyrite, molybdenite, bornite and pyrite disseminated in altered country rocks and in small veins or stockworks.

The middle hypogene stage is predominantly characterized by silver, lead and zinc-bearing veins. The veins are composed of white quartz and/or ankerite and contain dark brown sphalerite and pyrite with lesser galena and chalcopyrite.

The late hypogene stage is characterized by argillic alteration zones with pods and veins of pyritic chalcedony. Five alteration zones are recognized: a core vein zone, a silicified zone, an argillic zone, an argillic-sericite zone and an outer propylitic zone. Sulphide mineralization consists of disseminated sphalerite, galena and pyrite associated with the chalcedonic core vein zone. Minor chalcopyrite is associated with the argillic zone.

The supergene stage is characterized by jarosite gossan and hematite. Mineralization consists of native copper, malachite, azurite and chalcantite. Chalcocite may be present but was not positively identified (Assessment Report 16838).

One of the best samples analysed was taken from near an unnamed tributary of the Squingula River. The sample assayed 2.25 grams per tonne gold, 0.16 per cent copper and 8.4 grams per tonne silver (Assessment Report 16838). Another sample from this area assayed 0.3 gram per tonne gold, 33 grams per tonne silver and 1.25 per cent lead (Assessment Report 16838).

BIBLIOGRAPHY

EMPR AR 1965-72; 1966-81
EMPR ASS RPT 3868, 4563, 5947, 6492, *16838, 20607
EMPR EXPL 1976-E172-173; 1977-E214; 1999-19-31
EMPR GEM 1972-479; 1973-405; 1976-E172
EMPR OF 2001-18
GSC OF 342; 2322
GSC P 73-31; 76-29
CJES VOL 14, pp. 2414-2421
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1992/06/09

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 062**

NATIONAL MINERAL INVENTORY: 094D2,3 Cu4,Mo1

NAME(S): **PAC**, PAC 20, MOTASE NORTH,
MOTASE B, MOTASE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D02W
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 56 03 17 N
LONGITUDE: 126 58 02 W
ELEVATION: 1715 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6214033
EASTING: 626591

COMMENTS: Known mineralization on a ridge, approximately 2 kilometres south of Drift Lake, within the Pac 20 mineral claim (Assessment Report 4686).

COMMODITIES: Gold Copper Molybdenum Silver

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Bornite Pyrite Pyrrhotite

Copper

ASSOCIATED: Quartz

ALTERATION: Sericite Silica

ALTERATION TYPE: Sericitic Silicific'n

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal

TYPE: L04 Porphyry Cu ± Mo ± Au I05 Polymetallic veins Ag-Pb-Zn±Au

H04 Epithermal Au-Ag-Cu: high sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Jurassic
Unknown

GROUP

Hazelton

FORMATION

Telkwa

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Hornfelsed Volcanic
Andesitic Flow
Agglomerate
Meta Volcanic
Quartz Porphyry Dike
Feldspar Porphyry Dike
Quartz Porphyry
Tuff

HOSTROCK COMMENTS: The intrusions may be related to the Eocene Kastberg Intrusions (Assessment Report 4686).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Skeena Ranges

TERRANE: Stikine

METAMORPHIC TYPE: Contact

RELATIONSHIP:

GRADE: Hornfels

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

342.8600

Grams per tonne

Gold

9.2600

Grams per tonne

Copper

2.3800

Per cent

COMMENTS: Sample of vein material.

REFERENCE: Assessment Report 4686.

CAPSULE GEOLOGY

The Pac occurrence is located approximately 2 kilometres south of Drift Lake, on a ridge within the 1973 Pac 20 mineral claim (Assessment Report 4686).

The showing is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. The volcanics comprise agglomerates, andesitic flows and tuffs. These are intruded by feldspar porphyry dykes, quartz porphyry dykes and a quartz porphyry plug. The intrusions are possibly related to the Eocene Kastberg Intrusions

Alteration is predominantly silicification and sericitization.

CAPSULE GEOLOGY

Disseminations of chalcopyrite with associated pyrite, pyrrhotite and possibly native copper occur in hornfelsed volcanics. Molybdenite is found associated with the intrusives.

Approximately 750 metres to the south, another showing consists of three quartz veins striking 060 degrees and dipping vertically. Mineralization consists of chalcopyrite and bornite within the quartz veins. Mineralization is also found within the hornfelsed rocks near the intrusives.

A sample from the veins assayed 2.38 per cent copper, 9.26 grams per tonne gold and 342.86 grams per tonne silver (Assessment Report 4686).

BIBLIOGRAPHY

EMPR ASS RPT *4686
EMPR GEM 1973-401,402
EMPR AR 1965-72; 1966-81
EMPR PF (In 094D General File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/30

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 063**

NATIONAL MINERAL INVENTORY: 094D10 Cu3

NAME(S): **SUSTUT**, SUSTUT COPPER

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094D10E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 36 29 N
LONGITUDE: 126 40 41 W
ELEVATION: 1981 Metres

NORTHING: 6276170
EASTING: 642517

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of mineralized zone, 2.5 kilometres west of the Sustut River, 6 kilometres south of Savage Mountain and 200 kilometres north of Smithers (Geology, Exploration and Mining in British Columbia 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Hematite	Pyrite	Chalcocite	Bornite	Chalcopyrite
	Copper	Greenockite			
ALTERATION:	Prehnite	Pumpellyite	Epidote	Chlorite	Quartz
	Calcite	Malachite	Laumontite		
ALTERATION TYPE:	Zeolitic	Propylitic		Oxidation	
MINERALIZATION AGE:	Triassic				

DEPOSIT

CHARACTER: Disseminated Concordant Stratabound
CLASSIFICATION: Hydrothermal Volcanogenic
TYPE: D03 Volcanic redbed Cu
SHAPE: Tabular
MODIFIER: Folded Faulted
DIMENSION: 1554 x 1005 x 76 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Combined north and south parts of the deposit which are separated by a cirque. Mineralization is probably due to metasomatism during low grade regional metamorphism.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	

LITHOLOGY: Volcaniclastic Tuff
Volcaniclastic Siltstone
Volcaniclastic Sandstone
Volcaniclastic Agglomerate
Volcaniclastic Tuff Breccia
Argillaceous Tuff
Augite Porphyry Basalt
Andesite
Sediment/Sedimentary

HOSTROCK COMMENTS: The deposit is hosted in the upper volcaniclastic unit of the middle member of the Savage Mountain Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane	PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine	
METAMORPHIC TYPE: Regional	RELATIONSHIP: Syn-mineralization GRADE: Zeolite

INVENTORY

ORE ZONE: SOUTHEAST & SOUTHWEST REPORT ON: Y

CATEGORY: Combined YEAR: 2003
QUANTITY: 8561000 Tonnes

<u>COMMODITY</u>	<u>GRADE</u>
Copper	1.6150 Per cent

COMMENTS: Resource figures were calculated using a 0.65 per cent copper cutoff grade. See capsule geology table for details and the 1972 resource figure.

REFERENCE: Press Release, Doublestar Resources Ltd., February 3, 2003.

CAPSULE GEOLOGY

The Sustut occurrence is located approximately 6 kilometres south of Savage Mountain (Geology, Exploration and Mining in British Columbia 1973).
The general geology comprises a sequence of northwest striking

CAPSULE GEOLOGY

formations which are increasingly younger to the southwest. The oldest rocks are bands and inliers of sedimentary and volcanic rocks of the Permian Asitka Group. Unconformably overlying these rocks, as outliers to the east and as a broad belt to the west, are rocks of the Upper Triassic Takla and Lower to Middle Jurassic Hazelton groups. This forms a thick sequence of volcanic flows and volcanoclastics with minor non-volcanic sedimentary rocks. In the extreme west, the Upper Cretaceous to Eocene Sustut Group overlies the Takla Group unconformably. The Sustut Group is made up of non-volcanic sedimentary rocks with minor tuffs. Stocks of diorite to granodiorite intrude the Takla Group rocks in the east. They form a northwest trending belt, probably related to the Jurassic Omineca Intrusions. A few small stocks, apparently of the same intrusive phase, occur west of the main belt of Takla Group rocks. Minor basalt, andesite and porphyry dykes, sills and flows are found throughout the area of Takla Group rocks. Two groups of intrusives rocks are distinguished: an older group, probably Cretaceous and a younger Tertiary group. These intrusions are probably related to the Cretaceous Bulkley Intrusions and the Eocene Kastberg Intrusions.

The immediate area of the Sustut deposit is underlain by three fundamental stratigraphic subdivisions of the Upper Triassic Savage Mountain Formation (Takla Group) comprising some 6096 metres of rapidly deposited green and red basaltic to andesitic rocks. The "lower member" is characterized by subaqueous extrusions of dark green massive flows and pillow lavas. The flows range from augite porphyry basalt through feldspar porphyry, and amygdaloidal feldspar porphyry to aphanitic basaltic andesite. Predominantly overlying, and to a minor extent interbedded with, the flows are massive breccia and bedded tuffs and breccias. The breccias consist of large blocks of the underlying and adjacent flows in a tuffaceous matrix of similar composition. Fragments are poorly sorted in the massive breccias, but exhibit some grading in the bedded tuffs and breccias.

Individual members are of limited lateral extent and vary greatly in thickness.

The base of the "middle member" is marked by an accumulation of a thin layer of fine volcanic detritus comprised of tuffaceous siltstones and sandstones. Overlying this is a major pile of volcanoclastics, which completes the lower cycle of the middle member. The upper cycle is a repetition of the lower, commencing with a thin tuffaceous siltstone and wacke-sandstone unit overlain by a thick pile of volcanoclastics. The volcanoclastics are generally massive agglomerates, but locally display graded bedding, crossbedding and, high in the upper sequence, mud cracks and rare ripple marks. The clast content is substantially more heterogeneous than that in the lower member volcanic breccia and increases in heterogeneity upwards. Throughout the whole of the middle member all detritus is apparently derived from the lower member. Within both volcanoclastic sequences there is a general trend upward from green to red colour.

Clasts throughout the volcanoclastic piles are poorly sorted, ranging in size from grit to blocks 4 metres in diameter. The larger clasts tend to be subrounded or rounded, whereas the smaller fractions are almost entirely angular to sub-angular.

The "upper member" is a highly heterogeneous assemblage. The upper part is characteristically a sequence of argillaceous and arenaceous clastic sedimentary rocks, largely of volcanic composition and predominantly red in colour. Bedding is common and well developed. The lower part of the member is more varied, with lenses of green and red volcanic conglomerate containing clasts of both the underlying Takla assemblage and foreign chert, limestone, rhyolite, and jasper. These lower units are of limited extent, marked by rapid change in thickness and composition.

The upper volcanoclastic unit of the middle member is host to the copper mineralization of the Sustut deposit. It is a highly variable sequence of rocks ranging from augite porphyry basalt to andesite in composition. The sediments range from: rocks composed of greater than 60 per cent clasts, by volume (many of which are 0.6 metre or more in diameter); rocks with abundant small clasts; rocks with a few large and a few small clasts; to an arenaceous grit.

Interbedded with the grits are argillaceous tuff bands. Two colours predominate in the rocks: a dark green and a deep brownish red. On a large scale, there is a tendency for green to predominate at the base and red rocks to increase in abundance upwards. Most of the sequence comprises massive, unsorted volcanoclastics. Interspersed, however, are sections displaying abundant graded bedding and crossbedding on several scales. The clasts throughout the sequence include red and green aphanitic andesites, green augite porphyry, augite-feldspar porphyry, grey bladed feldspar porphyry and red and green tuff and tuff breccia.

CAPSULE GEOLOGY

There is little evidence of intrusive activity in the vicinity of the Sustut deposit. Intrusives are restricted to two suites of dykes. Narrow erratic lenses, rarely longer than 30 metres and wider than 1.5 metres, are apparently randomly oriented; they are comprised of subvolcanic andesite to dolerite.

At least two recognizable directions of folding are evident on the Sustut property. Both are broad open concentric folds with resultant domes and basins. Faulting along north-northwest and northeast trends is of major proportions. The Two Lake Creek fault is one of the most significant structural features in the area and has a vertical displacement of over a 1000 metres. It is identified as part of the Omineca fault zone, a northern extension of the Pinchi fault system.

Regional metamorphism throughout the Takla Group rocks is of the zeolite facies. Metamorphic grade increases northeast from laumontite subfacies in the upper member through the prehnite-pumpellyite subfacies in the middle and lower members. Green rocks of the middle member and to a lesser extent of the lower and upper members are characterized by an unusual abundance of chlorite and epidote. The greatest concentrations of epidote are found in the upper volcaniclastic unit of the middle member. Here, epidote, chlorite, quartz, and calcite are common in fracture-fillings as well as in open-space and amygdules replacing minerals. Finer-grained sequences are present, composed of 50 per cent epidote. The copper mineralization in this unit is not specifically associated with the greatest epidote concentrations, but is within the broad epidote envelope.

The Sustut deposit consists of a sulphide-rich sheet-like zone up to 76 metres thick in the upper volcaniclastic unit of the middle member. Downdip, the zone becomes increasingly irregular and generally becomes steeper more rapidly than the bedding. The zone is composed essentially of hematite, pyrite, chalcocite, bornite, chalcopyrite, and native copper in decreasing order of abundance. All occur as very fine grains disseminated through both matrix and clasts of the volcaniclastics. Increased mineral concentrations occur in the finer-grained tuff and tuffaceous matrix fractions. Hematite is ubiquitous throughout the zone; pyrite tends to form an incomplete envelope around the cupriferous lenses.

The northern part of the mineralized zone is characterized by a uniform, closely stratabound, continuous zone of copper mineralization. It is 15-24 metres thick and has little pyrite associated. Copper minerals are essentially chalcocite and lesser native copper. Separating the north from the south part of the zone is a deep cirque following a fracture zone.

In the eastern part of the south zone, copper mineralization is continuous and up to 45 metres thick. Chalcocite and bornite are the dominant minerals, with sporadic fringes above and below showing a gradation through chalcopyrite to pyrite. Downdip, the copper mineralization breaks up into a series of erratic lenses separated laterally and vertically by pyrite. Chalcocite is still the dominant copper mineral. Farther downdip, as the lenses become steeper and apparently transgressive to bedding, the mineralogy changes gradually to bornite and chalcopyrite. In the updip portion of the south part of the zone, a clear vertical zoning sequence, from pyrite fringes through chalcopyrite to bornite and a chalcocite core, is apparent.

The mineralized zone transgresses coarse and fine-grained rocks with no discontinuity. Pyrite has not been observed in proximity to native copper or chalcocite. Malachite development is observed on cliff faces. Lensing veins of massive bornite, chalcocite, and native copper, up to 15 centimetres wide, are found in some epidote, quartz, and calcite-filled fractures. They are most abundant in the southwest on fractures trending 110-150 degrees. The mineralized zone covers an area of 457 by 701 metres in the north and 548 by 853 metres in the south.

The Sustut deposit is approximately concordant with the strata over 30 to 61 metres of the middle member succession. It lies below the zone of transition from subaqueous to subaerial deposition in the top unit. Concentration in this specific zone is believed to be due to upward leaching of copper during low grade metamorphic and metasomatic reaction. Precipitation occurred in the zone of hydration characterized by prehnite-pumpellyite below the oxidized subaerial rocks.

The Sustut deposit has recently been classified as a basaltic copper (Church, B.N., 1992). The deposit formed from the metamorphism of copper-rich basaltic rocks. Mineralizing solutions deposited minerals in openings (permeable sediments, breccias, amygdules and fractures) when reducing environments were encountered.

Drill indicated resources based on diamond drilling in 1972 were 54,426,000 tonnes grading just under 1.25 per cent copper (Northern

CAPSULE GEOLOGY

Miner - April 12, 1973).

Cross Lake Minerals Ltd. acquired interest in the property from Falconbridge Limited in 1997. In 1999, Doublestar Resources Ltd. acquired the property.

Doublestar completed a drill program in 2000 which consisted of 22 diamond drill holes, totalling 1900 metres on the Southeast zone. They completed a 22 drill hole program in 2002 to raise the existing resource to National Instrument 43-101 standards and initiated a full feasibility study.

Resource figures released in 2003, shown in the table below, are based on the twenty-two 2002 drill holes and are to the National Instrument 43-101 standards.

SOUTHEAST AND SOUTHWEST ZONES AT 0.65%
 COPPER CUTOFF GRADE

Category	Tonnage 000s	Grade Cu %	Product Cu tonnes
Southeast			
Measured	3,859	1.811	69,900
Indicated	1,638	1.780	29,200
Inferred	132	1.685	2,200
-----	-----	-----	-----
Subtotal	5,629	1.799	101,300
-----	-----	-----	-----
Southwest			
Measured	1,358	1.316	17,900
Indicated	1,385	1.223	16,900
Inferred	189	1.171	2,200
-----	-----	-----	-----
Subtotal	2,932	1.263	37,000
-----	-----	-----	-----
Total	8,561	1.615	138,300
=====	=====	=====	=====

(Press Release, Doublestar Resources Ltd., February 3, 2003).

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 EMPR GEM 1972-481; *1973-411-432; 1974-305-309
 EMPR MAP 65, 1989
 EMPR OF 1998-8-I, pp. 1-20; 2001-18
 EMPR PF (Photograph; Doublestar Resources Ltd., Annual Report, Dec. 1999; Sustut Project, Doublestar Corporate Information, Feb. 2001)
 EMR MIN BULL MR 223 B.C. 264
 EMR MP CORPFILE (Wesfrob Mines Limited; Falconbridge Nickel Mines Limited)
 GSC MAP 962A
 GSC MEM 251
 GSC OF 342
 GSC P 74-1, Part A; 76-29
 CIM *Jan. 1977, pp. 97-104; Nov. 1980, p. 31
 GCNL #151(Aug.7), #168(Sept.2), 1997; #130(Jul.7), #156(Aug.15), #180(Sept.20), #181(Sept.21), #229(Nov.20), #236(Dec.11), 2000
 N MINER April 12, 1973; Online Oct.12, 2001; Dec.2, 2002; Feb.11, 17, 2003
 PR REL Doublestar Resources Ltd., July 30, Oct.17, Nov.12, 2002; Feb.3, 2003
 WWW <http://www.doublestar.net/>
 Wilton, D.H.C. (1980): A Genetic Model for the Sustut Copper Deposit, North-Central British Columbia, M.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24
 DATE REVISED: 2000/08/29

CODED BY: GSB
 REVISED BY: GO

FIELD CHECK: N
 FIELD CHECK: Y

MINFILE NUMBER: **094D 064**

NATIONAL MINERAL INVENTORY: 094D15 Cu2

NAME(S): **THOR**, THOR 1-36

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 52 40 N
LONGITUDE: 126 38 51 W
ELEVATION: 1828 Metres

NORTHING: 6306233
EASTING: 643362

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located approximately 4 kilometres northeast of the north end of Thorne Lake (Geology, Exploration and Mining in British Columbia, 1971-72).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Quartz
ALTERATION: Pyrite
ALTERATION TYPE: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Unnamed/Unknown Formation	

LITHOLOGY: Altered Andesite
Hornblende Andesite
Dacite
Syenitic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Thor occurrence is located approximately 4 kilometres northeast of the north end of Thorne Lake (Geology, Exploration, and Mining in British Columbia, 1971).

The occurrence is hosted in Permian Asitka Group silicified andesites, hornblende andesites and dacites near a syenitic dyke.

The rocks are bounded to the west by the north trending Moose Valley fault. Across the fault are rocks of the Upper Cretaceous Tango Creek Formation. To the east, the host rocks are bounded by an Early Jurassic quartz monzodiorite.

Mineralization consists of sparse chalcopyrite and molybdenite in fractures and quartz veins cutting the country rock.

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EM OF 2001-01
EMPR GEM *1971-62; 1972-481
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 73-31; 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/27

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 065**

NATIONAL MINERAL INVENTORY: 094D7,10 Cu2

NAME(S): **DAY, CISCO 2, SUSTUT,**
PORCUPINE, CISCO, CISCO 1-7

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07W 094D10W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 29 55 N
LONGITUDE: 126 46 19 W
ELEVATION: 1420 Metres

NORTHING: 6263800
EASTING: 637151

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a tributary of the Sustut River, approximately 5 kilometres north of the confluence of Red Creek and the Sustut River (Assessment Report 5107).

COMMODITIES: Copper Gold Molybdenum Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Molybdenite Pyrrhotite Sphalerite
ASSOCIATED: Quartz
ALTERATION: Silica Magnetite Chlorite
ALTERATION TYPE: Silicific'n Chloritic Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive Stratiform
CLASSIFICATION: Porphyry Volcanogenic Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
D03 Volcanic redbed Cu
DIMENSION: 3000 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The Porcupine zone extends along strike for 3 kilometres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	Unnamed/Unknown Informal

LITHOLOGY: Altered Granodiorite
Dacite
Andesite
Rhyolite
Rhyodacite Ash Flow
Leucocratic Porphyry Intrusive
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Copper 0.0130 Per cent
COMMENTS: Highest sample value from tuffaceous andesite containing pyritic layers.
REFERENCE: Assessment Report 21857.

ORE ZONE: PORCUPINE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Gold 4.9000 Grams per tonne
Copper 5.4000 Per cent
COMMENTS: Highest values from samples of the Porcupine zone.
REFERENCE: Assessment Report 21857.

CAPSULE GEOLOGY

The Day occurrence is located approximately 5 kilometres north

CAPSULE GEOLOGY

of the confluence of Red Creek and the Sustut River, on a tributary of the Sustut River informally named Day Creek (Assessment Report 5107). This occurrence comprises the Day occurrence and the new Porcupine zone, which is located about 200 metres to the northwest.

The showing is hosted within a large fault block of Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. The volcanics dip 30 degrees to the southwest and are intruded by Early Jurassic leucocratic porphyry plugs.

The uppermost 1000 metres of the Telkwa Formation are exposed locally. The base of the sequence is predominantly tuffs and volcanic conglomerates overlain by a rhyodacite ash flow which is overlain by an intercalation of andesites and dacite tephra (Geology in British Columbia, 1976). In the immediate area of the showing, small altered dioritic bodies intrude the volcanics.

The Day occurrence is hosted in altered granodiorite, which intrudes andesitic to dacitic volcanics. Mineralization consists of pyrite, magnetite, chalcopyrite and trace molybdenite. The sulphides occur as disseminations, fracture fillings and in vuggy quartz veinlets. The veinlets occur within the granodiorite and adjacent to the altered volcanic rocks. The highest assay from 1991 sampling, came from a sample of tuffaceous andesite containing pyritic layers. This sample assayed 0.066 gram per tonne gold, 0.46 gram per tonne silver and 0.013 per cent copper (Assessment Report 21857).

The Porcupine zone consists of stratiform gold-copper mineralization, which extends for up to 3 kilometres along strike (Northern Miner, October 7, 1991). The massive to semi-massive sulphides occur as multiple concordant bands or lenses hosted by dacitic to rhyolitic volcanics. Mineralization consists of pyrite, pyrrhotite, sphalerite, chalcopyrite and, locally, lenses of magnetite. The host rocks have been intensely silicified, weakly chloritized and partially argillically altered. Grab samples assayed 1.9 to 4.9 grams per tonne gold (1964 to 4960 parts per billion) and 1.25 to 5.4 per cent copper (Assessment Report 21857).

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EMPR FIELDWORK 2000, pp. 75-82
EMPR GEM *1972-479,* 1973-408, *1974-408
EMPR GEOLOGY 1976, pp. 110-117
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1, Part A
N MINER Oct.7, 1991
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/09

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 066**

NATIONAL MINERAL INVENTORY: 094D1 Cu2

NAME(S): **ARP**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D01W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 14 10 N
LONGITUDE: 126 16 32 W
ELEVATION: 1750 Metres

NORTHING: 6235697
EASTING: 668856

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 5 kilometres east-southeast of Mount Carruthers
(Property File - Canadian Superior Exploration Ltd., Maps from
Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Chalcocite	Bornite	Chalcopyrite		
ASSOCIATED:	Quartz	Chlorite	Epidote	Calcite	
ALTERATION:	Malachite	Azurite	Chlorite	Silica	
ALTERATION TYPE:	Oxidation		Chloritic		Silicific'n
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER:	Disseminated	Vein	Shear
CLASSIFICATION:	Hydrothermal	Epigenetic	
TYPE:	D03	Volcanic redbed Cu	

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesitic Tuff
Andesite
Dacite
Porphyry
Basalt
Agglomerate
Crystal Tuff
Lapilli Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Arp occurrence is located approximately 5 kilometres east-southeast of Mount Carruthers (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The showing is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) rocks. The Telkwa Formation in this area overlies the Upper Triassic Dewar Formation (Takla Group) and the Permian Asitka Group. The rocks of these two formations, together with the older Asitka Group, forms a conformable northeast dipping succession. To the south, lies the Permian to Jurassic Sitlika assemblage consisting of metamorphosed equivalents of the Asitka, Takla and Hazelton Groups (and possibly parts of the Bowser Lake Group).

The immediate area is underlain by Telkwa Formation pyroclastic and volcanic rocks with minor sedimentary rocks. The volcanics are comprised of porphyritic (plagioclase) to aphanitic basalts and andesites. Pyroclastic rocks include agglomerates, crystal tuffs and lapilli tuffs. The tuffs are interbedded with thinly bedded argillites, shales and tuffaceous shales. The Telkwa Formation is bounded to the northeast by the Pinchi fault and the Asitka Group is bounded to the southwest by the Carruthers thrust fault. Localized faults in the area trend northeast and parallel the major faults.

Disseminated chalcocite occurs in the contact zones between andesite or dacite flows and the andesitic tuffs. The chalcocite is confined to the siliceous intercalations in the tuffs. Malachite and azurite are commonly associated with this type of mineralization.

Disseminated to massive chalcocite, bornite and minor chalcopyrite occur within chlorite, epidote, and calcite veinlets. The veinlets cut chloritized andesite tuffs intercalated with minor siltstones.

CAPSULE GEOLOGY

Sparse disseminations of chalcopyrite occur within quartz veins cutting massive porphyritic to aphanitic andesite. These quartz veins range from 0.25 to 5.1 centimetres (Assessment Report 5017).

Chalcocite and bornite also occur in localized shear zones. One of these shear zones, along bedding, contains a high grade zone approximately 1.8 metres wide (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973). This zone is located approximately 2 kilometres to the south of the plotted location.

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EMPR ASS RPT *5017
EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
EMPR GEM 1973-401; 1974-294
GSC OF 342
GSC P 76-29
GSC MEM 251
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/10

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 067**

NATIONAL MINERAL INVENTORY:

NAME(S): **COCCOLA**, PETEKA 1

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D02W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 09 29 N
LONGITUDE: 126 54 54 W
ELEVATION: 1200 Metres

NORTHING: 6225628
EASTING: 629495

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 2 kilometres south-southeast of Mount Coccola (Assessment Report 14424).

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena
ASSOCIATED: Pyrite Quartz Carbonate
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE Lower Jurassic GROUP Hazelton FORMATION Telkwa IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Intermediate Volcanic
Felsic Volcanic
Andesite
Tuff
Agglomerate
Andesite
Porphyry
Quartz Feldspar Porphyry Dike

HOSTROCK COMMENTS: The porphyry dykes are possibly related to the Eocene Kastberg Intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Takla Trench

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 460.8000 Grams per tonne
Gold 2.6000 Grams per tonne

COMMENTS: Sample of quartz/carbonate vein material.
REFERENCE: Assessment Report 14424.

CAPSULE GEOLOGY

The Coccola occurrence, on the Peteka 1 claim, is located approximately 2 kilometres south-southeast of Mount Coccola and about 2 kilometres east of the unnamed lake at the headwaters of Driftwood River (Assessment Report 14424).

The geological setting is similar to that of the Bearnx occurrence (094D 003).

The entire Peteka claim group is underlain by Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. The volcanics predominantly consist of tuffs, agglomerates and andesitic grey to green rocks. Minor porphyritic (plagioclase and/or hornblende) flows and interflow sedimentary rocks are also present on the claims (Assessment Report 14424). Intruding the volcanic rocks are narrow quartz feldspar porphyry dykes. The dykes, 1 to 3 metres wide, strike northeast and are fine to medium grained. They are possibly related to the Eocene Kastberg Intrusions (Assessment Report 14424).

CAPSULE GEOLOGY

Chalcopyrite, galena and pyrite are associated with quartz-carbonate veins. Malachite staining on the veins is common. The veins are hosted in felsic to intermediate volcanics and fine to medium-grained andesites. The veins contain up to 10 per cent disseminated sulphides (Assessment Report 14424).

A sample, of quartz-carbonate vein material, assayed 2.6 grams per tonne gold and 460.8 grams per tonne silver (Assessment Report 14424). A float sample, found approximately 500 metres to the northwest, assayed 6.17 grams per tonne gold and 19.2 grams per tonne silver (Assessment Report 14424).

BIBLIOGRAPHY

EMPR ASS RPT *14424
EMPR EXPL 1986-C380,C381
GSC OF 342
GSC P 76-29
GSC MEM 251
GSC MAP 962A

DATE CODED: 1991/08/30
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 068**

NATIONAL MINERAL INVENTORY: 094D2 Cu5

NAME(S): **BEAR LAKE**, BEAR 1-54

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D02W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 06 49 N
LONGITUDE: 126 53 00 W
ELEVATION: 1685 Metres

NORTHING: 6220743
EASTING: 631613

LOCATION ACCURACY: Within 500M

COMMENTS: Located near the ridge top approximately 3 kilometres west of Bear Lake (Assessment Report 14679).

COMMODITIES: Copper Molybdenum Gold

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Pyrite Pyrrhotite
ASSOCIATED: Quartz Barite Carbonate
ALTERATION: K-Feldspar Biotite
ALTERATION TYPE: Potassic Biotite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au 105 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Irregular
MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Lower Jurassic
Eocene

GROUP

Hazelton

FORMATION

Telkwa

IGNEOUS/METAMORPHIC/OTHER

Kastberg Intrusions

ISOTOPIC AGE: 53 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Quartz Monzonite

LITHOLOGY: Quartz Monzonite Porphyry
Quartz Latite Porphyry
Monzonite
Granite
Quartz Feldspar Dike
Altered Volcanic
Hornfels

HOSTROCK COMMENTS: The isotopic age from Geological Survey of Canada Open File Map 342.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact

Stikine
RELATIONSHIP: Syn-mineralization

PHYSIOGRAPHIC AREA: Takla Trench

GRADE: Hornfels

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1980

COMMODITY

Copper
Molybdenum

GRADE

0.2500 Per cent
0.0900 Per cent

COMMENTS: The average grade from three drill holes.
REFERENCE: Assessment Report 8355.

CAPSULE GEOLOGY

The Bear occurrence is located approximately 3 kilometres west of Bear Lake near the top of the ridge (Assessment Report 14679). Mineralization is hosted in a quartz monzonite stock of the Eocene Kastberg Intrusions. These intrusions have a potassium-argon date of 53 Ma (Geological Survey of Canada Open File 342). The stock intrudes Lower Jurassic Telkwa Formation (Hazelton Group) volcanics and volcaniclastics. Telkwa Formation rocks are metamorphosed to hornfels grade near the contact. The major faults in the area trend northwest, separating rock types of different groups. On a regional scale, the strata strikes northwest and dips moderately to the

CAPSULE GEOLOGY

northeast.

The intrusion trends northeast and contains quartz monzonite porphyry and quartz latite porphyry as its main phases. The quartz monzonite porphyry is equigranular containing 50 to 60 per cent plagioclase, 8 to 12 per cent quartz, up to 10 per cent mafics (predominantly hornblende with minor biotite) and up to 20 per cent potassium feldspar. The quartz latite porphyry forms the central portion of the intrusive complex and is characterized by 5 to 10 per cent megacrysts of pink feldspar with a crowded porphyry matrix containing 57 per cent phenocrysts. The phenocrysts are plagioclase (32 per cent), quartz (14 per cent), potassium feldspar (8 per cent), and biotite (6 per cent). The rest of the rock (approximately 40 per cent) is aphanitic matrix. Other phases of the intrusion are granite porphyry, monzonite, pink granite, and quartz feldspar (quartz monzonite porphyry) dykes.

Intense potassic alteration occurs within the monzonite, which contains abundant potassium feldspar and secondary fine-grained biotite associated with quartz veining.

The best mineralization is associated with the alteration in the monzonite and consists of chalcopyrite, molybdenite and pyrite in quartz veinlets. Pyrite is extensive and occurs as pyritic lenses, veinlets and disseminations throughout the volcanic units. Minor pyrrhotite was found within the altered volcanics. Mineralization appears to be related to the porphyry system (Assessment Report 14679). A green framboidal pyrite, found on the property, was found to carry significant gold values.

The veining is mainly associated with the intrusive porphyritic units and in particular, near the margins and contacts with the volcanic rocks. One vein, approximately 3.5 metres wide, cutting volcanic rocks contained barite and carbonate in a quartz matrix. Minor chalcopyrite and galena are disseminated in the barite.

Samples from three drill holes assayed average grades of 0.25 per cent copper and 0.09 per cent of molybdenum (Assessment Report 8335).

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EMPR GEM 1972-479; 1973-401; 1974-294
EMPR ASS RPT 4686, 5236, 5269, *8335, 9534, *10369, *14679
EMPR EXPL 1980-418; 1981-571; 1983-469
GSC MAP 962A
GSC MEM 251
GSC OF 342; 2232
GSC P 76-29
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/30

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 069**

NATIONAL MINERAL INVENTORY: 094D3 Mo1

NAME(S): **HORN**, HORN 1-48

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 06 47 N
LONGITUDE: 127 03 42 W
ELEVATION: 1300 Metres

NORTHING: 6220355
EASTING: 620528

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 7 kilometres north of Motase Lake (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Bowser Lake	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Telkwa	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Hornfels
Porphyry
Pyritic Argillite
Aplite Dike

HOSTROCK COMMENTS: The host rock is possibly of the Bowser Lake Group or the Hazelton Group.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Skeena Ranges
Stikine
RELATIONSHIP: Syn-mineralization GRADE: Hornfels

CAPSULE GEOLOGY

The Horn occurrence is located approximately 7 kilometres north of Motase Lake (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

Mineralization is hosted in hornfelsed sediments intruded by a porphyry stock to the north and a series of northeast-trending porphyry dykes to the south. The sediments could belong to either the Middle to Upper Jurassic Bowser Lake Group or the Lower Jurassic Telkwa Formation (Hazelton Group). The intrusions are possibly related to the Eocene Kastberg Intrusions. The porphyry is a 300 by 2000 metre plug with a metamorphic aureole ranging from 60 to 275 metres in width (Assessment Report 5323).

Disseminated molybdenite and variable amounts of chalcopyrite occur in country rocks, aplite dykes and quartz veinlets. Pyrite is common and is pervasive within the argillites surrounding the intrusives.

BIBLIOGRAPHY

EMPR ASS RPT 4731, *5323, 8849
EMPR GEM 1973-402; 1974-297
EMPR OF 2001-18
EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/28

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 069**

MINFILE NUMBER: **094D 070**

NATIONAL MINERAL INVENTORY: 094D2 Cu2

NAME(S): **PETEYAZ**, PETEKA 3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D02W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 08 20 N
LONGITUDE: 126 56 46 W
ELEVATION: 1990 Metres

NORTHING: 6223438
EASTING: 627626

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 2.5 kilometres southeast of Peteyaz Peak (Assessment Report 14424).

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
COMMENTS: Tetrahedrite may be present.

ASSOCIATED: Quartz Carbonate Hematite
ALTERATION: Silica Carbonate Chlorite Malachite Azurite

ALTERATION TYPE: Silicific'n Argillic Oxidation Carbonate Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

TYPE: L04 Porphyry Cu ± Mo ± Au D03 Volcanic redbed Cu
L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Altered Volcanic
Tuff
Agglomerate
Andesite
Porphyry
Quartz Feldspar Porphyry Dike

HOSTROCK COMMENTS: The dykes are possibly related to the Eocene Kastberg Intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Takla Trench

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1985
SAMPLE TYPE:	Grab		
COMMODITY	GRADE		
Silver	185.8000	Grams per tonne	
Gold	5.6000	Grams per tonne	
Copper	8.2500	Per cent	

COMMENTS: One of the best results. Sample from a silicified shear zone.
REFERENCE: Assessment Report 14424.

CAPSULE GEOLOGY

The Peteyaz occurrence is located approximately 2.5 kilometres southeast of Peteyaz Peak, within the 1985 Peteka 3 claim (Assessment Report 14424).

The geological setting is the same as the Bearnx occurrence (094D 003).

The entire Peteka 1-4 claim group is underlain by Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. The volcanics predominantly consist of tuffs, agglomerates and andesitic grey to green rocks. Minor porphyritic (plagioclase and/or hornblende) flows and interflow sedimentary rocks are also present. Narrow quartz feldspar porphyry dykes, 1 to 3-metres wide, strike northeast and intrude the volcanic rocks. The dykes, fine to medium-grained, are possibly related to the Eocene Kastberg Intrusions (Assessment Report

CAPSULE GEOLOGY

14424).
Widespread mineralization is clustered around the plotted location for approximately 1 kilometre, along regional strike to the northwest and southeast. The style of mineralization is common to all the small occurrences with minor local differences. The sulphides are predominantly chalcopyrite and pyrite with associated specular hematite. Tetrahedrite may also be present. The mineralization occurs in silicified shear zones, in irregular quartz and/or carbonate veins and as disseminations in the altered host rocks. Malachite-staining and lesser azurite-staining is common. The host rocks are locally pyritic altered volcanics. Carbonate alteration, silicification, minor argillic alteration and chloritization are present.

One of the best samples, from a silicified shear zone, assayed 8.25 per cent copper, 5.6 grams per tonne gold and 185.8 grams per tonne silver (Assessment Report 14424).

BIBLIOGRAPHY

EMPR ASS RPT *14424, 14678
EMPR EXPL 1986-C380,C381
EMPR PF (In 094D General File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/08/30
DATE REVISED: 1992/06/06

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 072**

NATIONAL MINERAL INVENTORY:

NAME(S): **FC**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 02 20 N
LONGITUDE: 127 04 51 W
ELEVATION: 1120 Metres

NORTHING: 6212069
EASTING: 619566

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the magnetic anomaly (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Unknown
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Bowser Lake	Unnamed/Unknown Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Sediment/Sedimentary
Tuff
Diorite
Calcareous Dike

HOSTROCK COMMENTS: The diorite is possibly related to the Eocene Kastberg Intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The FC occurrence is located approximately 1.25 kilometres west of Motase Lake and is coincident with a magnetic anomaly (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The host rocks are interbedded tuffs and sediments of the Middle to Upper Jurassic Bowser Lake Group. These rocks are cut by diorite intrusions, "calcareous" dykes and quartz veins.

The quartz veins are reported to contain gold and silver.

BIBLIOGRAPHY

EMPR AR *1962-9
EMPR OF 2001-18
EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1991/08/22
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 073**

NATIONAL MINERAL INVENTORY: 094D3 Mo2,Cu5

NAME(S): **QUIN, SUN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 12 47 N
LONGITUDE: 127 12 34 W
ELEVATION: 1760 Metres

NORTHING: 6231235
EASTING: 611051

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 16 kilometres north of Motase Peak (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite
ASSOCIATED: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Jurassic
Unknown

GROUP

Bowser Lake

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Biotite Quartz Diorite
Biotite Hornfels
Shaly Argillite

HOSTROCK COMMENTS: The intrusive host rock is possibly related to the Eocene Kastberg Intrusions (Assessment Report 14073).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Skeena Ranges

RELATIONSHIP: Syn-mineralization

GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1985

COMMODITY

GRADE

Molybdenum

0.0500

Per cent

COMMENTS: Sample of mineralized biotite quartz diorite.

REFERENCE: Assessment Report 14073.

CAPSULE GEOLOGY

The Quin occurrence is located approximately 16 kilometres north of Motase Peak (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973). A similar molybdenite occurrence is located approximately 1.5 kilometres to the southwest.

Both showings are hosted in a biotite quartz diorite intrusive body which may be related to the Eocene Kastberg Intrusions. This body intrudes sediments, predominantly shaly argillites, of the Middle to Upper Jurassic Bowser Lake Group (similar to the Gold #8 occurrence, 094D 118). The sediments are folded, fractured and biotite hornfelsed near the intrusion.

Mineralization consists of 0.05 per cent molybdenum, occurring as molybdenite flakes up to 0.5 millimetre in size, minor chalcopyrite and magnetite (Assessment Report 14073).

BIBLIOGRAPHY

EMPR ASS RPT *14073
EMPR EXPL 1985-C344
EMPR GEM 1973-403
EMPR OF 2001-18
EMPR PF (In 094D General File - *Canadian Superior Exploration

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 406
REPORT: RGEN0100

BIBLIOGRAPHY

Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 73-31; 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/20

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 074**

NATIONAL MINERAL INVENTORY: 094D7 Cu4

NAME(S): **EIGHT**, PAT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 27 52 N
LONGITUDE: 126 41 47 W
ELEVATION: 1680 Metres

NORTHING: 6260152
EASTING: 641929

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showings 3 and 4, approximately 3.5 kilometres east of the Sustut River and 8 kilometres south of Willow Creek (Assessment Report 4892).

COMMODITIES: Copper

Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Pyrite
ASSOCIATED: Quartz Calcite
COMMENTS: Mineralization occurs in quartz-carbonate veins.
ALTERATION: Silica Chrysocolla
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Dewar

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Cherty Siltstone
Tuffaceous Wacke
Diorite
Pyroclastic
Crystal Tuff
Banded Chert

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Eight occurrence is located approximately 3.5 kilometres east of the Sustut River and 8 kilometres south of Willow Creek (Assessment Report 4892).

Regionally, the area is underlain by Upper Triassic Dewar Formation (Takla Group) sediments, which are bounded to the south by a northwest trending fault. Upper Triassic Moosevale Formation (Takla Group) volcanics occur across the fault.

Locally, a dioritic intrusion cuts black cherty siltstones and grey tuffaceous wackes.

Four calcite-quartz veins, containing sphalerite and minor chalcopyrite, are associated with these rocks.

At the plotted location, chrysocolla, chalcopyrite and pyrite disseminations are found near the contact between the pyroclastics and the banded cherts. Nearby, silicified and quartz veined rocks contain disseminated chalcopyrite and pyrite.

Approximately 500 metres to the south, chalcopyrite and pyrite are disseminated in a crystal tuff near an east-southeast striking fault.

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT *4784, *4892
EMPR GEM 1973-407
GSC MAP 962A
GSC MEM 251
GSC OF 342

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 408
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/06/06

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 075**

NATIONAL MINERAL INVENTORY: 094D7 Cu5

NAME(S): **PLUTO**, PARK 1, PARK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 28 29 N
LONGITUDE: 126 36 42 W
ELEVATION: 1850 Metres

NORTHING: 6261474
EASTING: 647108

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 8 kilometres east of the Sustut River and 5 kilometres south of Willow Creek (Assessment Report 4564).

COMMODITIES: Copper Silver Lead

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Galena
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Stockwork Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu
DIMENSION: 3 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The Pluto showing occurs in a 2 to 3-metre wide shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Telkwa

LITHOLOGY: Fine Grained Andesitic Tuff
Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 78.8000 Grams per tonne
Copper 2.8000 Per cent
COMMENTS: Sample from the Pluto showing.
REFERENCE: Assessment Report 21856.

ORE ZONE: STOCKWORK REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 66.0000 Grams per tonne
Copper 1.3800 Per cent
COMMENTS: Sample ZR-117 of calcite vein in andesite tuff mineralized with
chalcocite and galena.
REFERENCE: Assessment Report 21856.

CAPSULE GEOLOGY

The Pluto occurrence is located approximately 8 kilometres east of the Sustut River and 5 kilometres south of Willow Creek (Assessment Report 4564). The similar Park 2 occurrence (094D 052), is located about 2 kilometres to the southeast.

The showing lies within sheared Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. The dominant rock types are fine-grained andesitic tuffs and agglomerates. The major shears in the area trend northwest.

Disseminated chalcocite, bornite and chalcopyrite occur within malachite-stained shear zones. Occasionally, these sulphides form

CAPSULE GEOLOGY

massively in small cracks and veinlets. The shear zones, up to 0.9 metres wide, range from 7 to 10 metres in traceable length.

The Pluto showing consists of a 2 to 3-metre wide malachite-stained, east-west trending shear zone. A grab sample assayed 2.8 per cent copper and 78.8 grams per tonne silver (Assessment Report 21856).

In 1991, a 9-metre wide quartz-calcite stockwork was discovered in outcrop near the Pluto showing. A grab sample, of a calcite vein mineralized with chalcocite and galena, from this stockwork in andesite tuff, assayed 1.38 per cent copper and 66 grams per tonne silver (Assessment Report 21856).

These stockworks are common in the claim area, but most of the sample values reflected only background values.

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT *4564, 4855, *21856
EMPR EXPL 1985-C345
EMPR GEM 1973-407
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/02

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 076**

NATIONAL MINERAL INVENTORY: 094D8 Cu4

NAME(S): **LIZ**, LIZ 1-8

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 17 50 N
LONGITUDE: 126 24 02 W
ELEVATION: 1433 Metres

NORTHING: 6242197
EASTING: 660854

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 6 kilometres northwest of Mount Carruthers (Assessment Report 5043).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcocite Bornite Chalcopyrite
ASSOCIATED: Calcite Epidote Chlorite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Stratabound Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Chloritic Andesitic Tuff
Siltstone
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Liz occurrence is located approximately 6 kilometres northwest of Mount Carruthers (Assessment Report 5048).

The geological setting is similar to that of the Mar occurrence (094D 093).

The area is underlain by Lower Jurassic Telkwa Formation (Hazelton Group) volcanics and minor sediments. The volcanics are predominantly andesitic flows with aphanitic to porphyritic (amphiboles more common than pyroxenes) textures. Andesitic tuffs, interbedded with thinly bedded siltstones, and agglomerates also occur in the area. Graded bedding and crossbedding are common. These rocks are locally folded and a northwest-trending syncline-anticline pair has been recognized in the immediate area.

Sulphides occur within strongly chloritized green andesitic tuffs with interbedded siltstones. The mineralization is stratabound and the overlying argillites are unmineralized (Assessment Report 5048). The mineralization occurs in networks and fractures of chlorite, epidote and calcite veinlets. These contain disseminated to massive chalcocite, bornite, and rare chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT *5048
EMPR GEM 1973-409
GSC OF 342
GSC P 76-29
GSC MEM 251
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1992/06/11

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 077**

NATIONAL MINERAL INVENTORY: 094D10 Cu4

NAME(S): **BIRCH**, BIRD, BIRD 36,
BIRD 40

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 30 35 N
LONGITUDE: 126 48 50 W
ELEVATION: 1420 Metres

NORTHING: 6264953
EASTING: 634530

LOCATION ACCURACY: Within 1 KM

COMMENTS: Centre of the 1973 Bird 36 and 40 claims (Mineral Titles, claim maps for 094D/10W, 1973).

COMMODITIES: Copper Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite
ALTERATION: Malachite Pyrite Quartz Sericite
ALTERATION TYPE: Sericitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Hydrothermal Porphyry

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Jurassic
Lower Jurassic

GROUP

Hazelton

FORMATION

Telkwa

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Quartz Porphyry
Andesite Tuff
Dacitic Tuff
Breccia
Diorite
Leucocratic Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

CAPSULE GEOLOGY

The Birch occurrence is located near the center of the Bird 36 and 40 claims (Mineral Titles, 1973 Claim Map for 094D/10W).

Regionally, the showing occurs within a large fault block of Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. Within the fault block, the strata dips 30 degrees to the southwest. Small, Early Jurassic leucocratic porphyry plugs intrude the volcanics.

In the immediate area, outcrops of quartz porphyry and diorite intrude andesite, and dacitic tuffs and breccias. The quartz porphyry contains variable amounts of disseminated pyrite and locally exhibits quartz-sericite-pyrite (phyllic) alteration.

Mineralization consists of chalcopyrite, sphalerite, and limited galena in irregular fractures. Malachite-staining has been noted in the area.

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT 4785, 4787
EMPR GEM *1973-445
EMPR Mineral Titles, Claim Map for 094D/10W, 1973
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/07/17

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 078**

NATIONAL MINERAL INVENTORY: 094D10 Cu5

NAME(S): **ROY, SUS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 32 N
LONGITUDE: 126 45 19 W
ELEVATION: 1625 Metres

NORTHING: 6266832
EASTING: 638079

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the trenched area, approximately 4 kilometres southwest of the confluence of Two Lake Creek and the Sustut River (Assessment Report 21359).

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Magnetite
ALTERATION: Malachite Pyrite Epidote Calcite Silica

ALTERATION TYPE: Silicific'n Carbonate Epidote Pyrite Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic Unknown	Hazelton	Telkwa	Unnamed/Unknown Informal

LITHOLOGY: Monzonite
Syeno Monzonite
Porphyritic Andesite
Porphyritic Dacite
Andesitic Tuff
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: STOCKWORK REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Chip
COMMODITY GRADE
Gold 0.5480 Grams per tonne
Copper 0.1210 Per cent
COMMENTS: The weighted average over a 62-metre interval.
REFERENCE: Assessment Report 21359.

CAPSULE GEOLOGY

The Roy showing is located approximately 4 kilometres southwest of the confluence of Two Lake Creek and the Sustut River (Assessment Report 21359).

The regional geology is similar to that of the Barn showing (094D 084).

In the immediate area, Lower Jurassic Telkwa Formation (Hazelton Group) purple tuffs overlie porphyritic andesite, which grades into a porphyritic dacite, and dacitic fragmental horizons. The volcanics are intruded by a small syeno-monzonite or monzonite stock (Assessment Report 21359). Calcite, epidote and carbonate alteration minerals occur in the volcanic rocks. The intrusive exhibits silicic and pyritic alteration.

Chalcopyrite, malachite and magnetite occur in pyritic quartz stockworks and stringers, which cut the intrusive. The stockworks consist of steeply dipping, closely spaced sets of fractures and stringers trending northeast to southeast. Individual stringers

CAPSULE GEOLOGY

range from 0.1 to 5 millimetres in width (Assessment Report 21359). Subsequent trenching has shown the mineralized stockwork system to be open to the north and south (across strike) as well as along strike.

The best result, from the east trenches, was a weighted average of 0.121 per cent copper and 0.548 gram per tonne gold over 62 metres (Assessment Report 21359).

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GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 74-1 Part A; 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/11

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 080**

NATIONAL MINERAL INVENTORY:

NAME(S): **GERLE GOLD NORTH**

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D15E 094D16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 54 49 N
LONGITUDE: 126 30 43 W
ELEVATION: 1375 Metres

NORTHING: 6310526
EASTING: 651475

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the 1990 group of trenches referred to as trench plan 3 (Assessment Report 20947).

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Galena
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Epidote Silica
ALTERATION TYPE: Oxidation Epidote Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic Igneous-contact
TYPE: I01 Au-quartz veins
SHAPE: Tabular
MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE

Unknown
Lower Cretaceous
Lower Jurassic

GROUP

Unnamed/Unknown Group

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Jensen Peak Batholith
Fleet Peak Pluton

LITHOLOGY: Carbonate Chlorite Sericite Schist
Amphibolite Gneiss
Quartz Monzonite
Quartz Diorite
Schist
Pegmatite Dike

HOSTROCK COMMENTS: The metamorphosed volcanics may belong to either the Takla Group or the Lay Range assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Amphibolite

INVENTORY

ORE ZONE: NORTH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1990

SAMPLE TYPE: Grab

COMMODITY

GRADE

Gold 0.2500 Grams per tonne
Copper 0.1540 Per cent

COMMENTS: A grab sample of altered and silicified amphibolite gneiss.
REFERENCE: Assessment Report 20947.

CAPSULE GEOLOGY

The Gerle Gold North occurrence is located, in the 1990 trench 3 area, 2 kilometres southeast of Fredrikson Lake (Assessment Report 20947).

The local and regional geology is similar to that of the Gerle Gold deposit (094D 006), which lies about 6 kilometres to the southeast.

Locally, the area is underlain by four main rock types: amphibolite gneiss, quartz diorite, quartz monzonite and schist (Assessment Report 20947). The schist occurs in discontinuous zones. The amphibolite gneiss is composed of bands of fine to medium-grained amphibolite interlayered with irregular shaped felsic-rich bands. This elongate unit has a general northwest trend and is cut by thin

CAPSULE GEOLOGY

pegmatite dykes which crosscut the gneissic banding. The close proximity of the Ingenika fault suggests that the amphibolites could possibly be metamorphosed Middle Triassic to Lower Jurassic Takla Group volcanics or Pennsylvanian to Permian Lay Range assemblage volcanics.

The quartz diorite, of the Early Jurassic Fleet Peak pluton, is medium-grained and dominated by plagioclase with lesser hornblende, epidote, biotite, chlorite and potassium feldspar (Assessment Report 20947). The intrusion is foliated, has an average strike of 155 degrees and dips vertically (Assessment Report 20947). The intrusion lies to the west and south of the amphibolite gneiss unit.

The quartz monzonite, of the Early Cretaceous Jensen Peak batholith, is medium-grained and dominated by plagioclase with lesser quartz and potassium feldspar (Assessment Report 20947). The intrusion lies to the east and south of the amphibolite gneiss. The contact with the amphibolite gneiss is a 1 to 5-metre zone of coarse-grained epidote-garnet-calcite skarn and epidotized amphibolite gneiss. A well-developed chlorite schist zone also occurs near this contact (Assessment Report 20947).

The schist occurs in discontinuous zones within the amphibolite gneiss and quartz monzonite units. These zones are a few centimetres to 12 metres in thickness and often host quartz-carbonate veins (Assessment Report 20947). The schists are composed of chlorite, sericite and calcite with lesser quartz and plagioclase. The schist zones exhibit features of brittle-ductile shear zones and high bulk strain (Assessment Report 20947). The schistosity strikes between 155 and 175 degrees, dipping steeply northeast or southwest. The majority of the quartz veins are parallel or sub-parallel to the walls of the schist zones (Assessment Report 20947).

Structures all trend approximately northwest with steep dips to the northeast or southwest. These structures include quartz veins, schist zones, foliation in the amphibolite and contacts. Local faulting, in the schist zones, trends sub-parallel to the general structure with a west-northwest strike (Assessment Report 20947).

Gold and silver mineralization is associated with sparse pyrite, chalcopyrite and galena in quartz-carbonate veins. The veins are hosted by steeply dipping carbonate-chlorite-sericite schist zones developed within the amphibolite gneiss unit (Assessment Report 20947). The quartz-carbonate veins occur discontinuously for a total strike length of 9 kilometres (Assessment Report 20947). From the plotted location, this style of mineralization extends for 8 kilometres to the southeast and 1 kilometre to the northwest.

Pyrite and lesser chalcopyrite also occur in non-schistose zones in the amphibolite gneiss, in areas of increased epidotization or silicification. A grab sample, from an altered and silicified amphibolite gneiss with minor carbonate and malachite-staining, assayed 0.154 per cent copper and 0.25 gram per tonne gold (Assessment Report 20947).

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GSC P 76-29
GCNL #62,#125,#152, 1983; #54,#146,#165,#200, 1984; #69,#133,#184,
#240, 1985)
INT PROS & DEV MAG Aug/Sept 1983; Aug/Sept 1984; Nov/Dec 1985
NORTH AMERICAN GOLD MINING INDUSTRY NEWS, October 11, 1985
Placer Dome File

DATE CODED: 1992/06/15
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 081**

NATIONAL MINERAL INVENTORY: 094D10 Cu8

NAME(S): **B, TOPPER, B19**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 38 14 N
LONGITUDE: 126 44 51 W
ELEVATION: 2000 Metres

NORTHING: 6279273
EASTING: 638149

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the B19 mineral claim which is host to the Topper vein (Assessment Report 4882).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcocite Bornite Chalcopyrite
ALTERATION: Epidote Silica Malachite Carbonate
ALTERATION TYPE: Epidote Oxidation Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Podiform
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 30 x 8 Metres STRIKE/DIP: 045/60S TREND/PLUNGE:
COMMENTS: The Topper vein strikes northeast and dips 60 degrees to the southeast (Assessment Report 4882). Mineralized fractures occur in an area 8 by 30 metres in size.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE: Lower Jurassic GROUP: Hazelton FORMATION: Telkwa IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Andesitic Pyroclastic Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1973
SAMPLE TYPE: Chip
COMMODITY:

COMMODITY	GRADE	
Silver	150.9000	Grams per tonne
Copper	5.8500	Per cent

COMMENTS: One of the best samples from the Topper area. Taken across a narrow width.
REFERENCE: Assessment Report 4882.

CAPSULE GEOLOGY

The B showing is located near the headwaters of Moosevale Creek, approximately 4.5 kilometres southwest of Savage Mountain (Assessment Report 4882). This occurrence includes the Topper showing and the surrounding mineral occurrences.

The general geology consists of a sequence of northwest striking formations which get increasingly younger to the southwest. The oldest are Permian Asitka Group sedimentary and volcanic rocks. A thick volcanic succession of Upper Triassic Takla and Lower to Middle Jurassic Hazelton Group rocks lies unconformably to the east.

The immediate area of the B showing is underlain by Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. These are separated from the Upper Triassic Takla Group (in this area the Moosevale Formation) by a northwest trending fault. The Telkwa Formation rocks consist of well-bedded andesitic pyroclastics and predominantly maroon/purple to green intercalated flows. Bedding in the area strikes northeast and dips gently to the northwest.

The Topper showing consists of several sporadic and

CAPSULE GEOLOGY

discontinuous mineralized fractures. The fractures, generally striking northeast and dipping 60 degrees southeast, occur within an approximately 8 by 30 metre area (Assessment Report 5366). Localized shear zones trend northwest and are perpendicular to a steeply dipping, northeast striking joint pattern.

Several mineral showings are clustered around the Topper showing and appear to be associated with the structural features in the area. Mineralization typically occurs with quartz-carbonate-epidote alteration along fractures, veins and shears. Mineralization consists of abundant fine-grained chalcocite, common malachite and lesser bornite and chalcopyrite. One of the best assays, from the Topper showing area, was 5.85 per cent copper and 150.9 grams per tonne silver, over a narrow width (unspecified) (Assessment Report 4882). This sample came from a mineralized pod along a shear.

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DATE CODED: 1985/07/24
DATE REVISED: 1991/07/18

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 082**

NATIONAL MINERAL INVENTORY: 094D10 Cu9

NAME(S): **WILLOW**, WILLOW 3-4

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 33 32 N
LONGITUDE: 126 36 28 W
ELEVATION: 1700 Metres

NORTHING: 6270847
EASTING: 647021

LOCATION ACCURACY: Within 1 KM

COMMENTS: The occurrence is located between the Willow 3 and Willow 4 claims (Geology, Exploration and Mining in British Columbia, 1973 and Mineral Titles, 1973 Claim Maps for 094D/10E).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Hydrothermal
TYPE: D03 Volcanic redbed Cu E04 Sediment-hosted Cu

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	

LITHOLOGY: Tuffaceous Argillite
Volcaniclastic
Augite Porphyry Breccia
Aphanitic Basaltic Flow
Fossiliferous Shale
Chert
Carbonate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE: Zeolite

CAPSULE GEOLOGY

The Willow showing is located approximately 4 kilometres southwest of Sustut Peak (Geology, Exploration and Mining in British Columbia, 1973).

The regional geology is similar to the Sustut deposit (094D 063).

The stratigraphy at the Willow comprises augite porphyry breccias overlain by a sequence of thinly-bedded aphanitic basalts, fossiliferous shales, chert and carbonate beds, and a thick volcaniclastic unit. The strata is locally offset by faults which are subparallel to a strong set of cross-joints, which strike 25 degrees and dip steeply to the southeast. The occurrence is hosted in the Upper Triassic Savage Mountain Formation (Takla Group) and is thought to be hosted in a lower stratigraphic horizon than the Sustut deposit.

The mineralized horizon is a thin discontinuous tuffaceous argillite bed just below the volcaniclastic unit. Mineralization consists of both chalcopyrite and chalcocite, which form discrete grains less than 1 millimetre in diameter. The copper sulphides are disseminated in varying concentrations and can constitute as much as 30 per cent by weight, in some samples (Geology, Exploration, and Mining in British Columbia, 1973).

Cross Lake Minerals Ltd. mapped and sampled the property in 1997.

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EMPR GEM *1973-432 (photographs)
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GSC MAP 962A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 421
REPORT: RGEN0100

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WWW <http://www.crosslakeminerals.com>;
WWW http://www.infomine.com/index/properties/WILLOW_PROPERTY.html

DATE CODED: 1985/07/24
DATE REVISED: 1991/07/20

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 083**

NATIONAL MINERAL INVENTORY: 094D10 Cu11

NAME(S): **GRIZZLY-ORK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 33 35 N
LONGITUDE: 126 52 37 W
ELEVATION: 1550 Metres

NORTHING: 6270396
EASTING: 630479

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located approximately 13 kilometres west-southwest of the confluence of Two Lake Creek and the Sustut River (Geology, Exploration and Mining in British Columbia, 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Bornite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Agglomerate
Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Grizzly-Ork occurrence is located approximately 13 kilometres west-southwest of the confluence of Two Lake Creek and the Sustut River (Geology, Exploration and Mining in British Columbia, 1973).

The regional and local geology is similar to the Birch showing (094D 077).

The showing is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) tuffs and agglomerates, which are intruded by porphyry dykes. The mineralization consists of disseminated bornite and chalcopyrite in the volcanic rocks.

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GSC OF 342
GSC MEM 251
GSC P 74-1 Part A; 76-29
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/07/16

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 084**

NATIONAL MINERAL INVENTORY: 094D10 Cu1

NAME(S): **BARN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 41 50 N
LONGITUDE: 126 45 38 W
ELEVATION: 1540 Metres

NORTHING: 6285923
EASTING: 637131

LOCATION ACCURACY: Within 500M

COMMENTS: Showing #4, approximately 6 kilometres northwest of Savage Mountain
(Assessment Report 4710).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Agglomerate
Tuff
Limestone
Feldspar Porphyry Dike
Quartz Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Barn showing is located just south of a small unnamed lake, approximately 2 kilometres west of Moosevale Creek (Assessment Report 4710).

The general geology consists of a sequence of northwest striking strata which becomes increasingly younger to the southwest. The oldest rocks are Permian Asitka Group sedimentary and volcanic rocks. A thick volcanic succession assigned to the Upper Triassic Takla and Lower to Middle Jurassic Hazelton groups unconformably overlies these rocks.

In the immediate area, the Lower Jurassic Telkwa Formation (Hazelton Group) is in fault contact with the Upper Triassic Savage Mountain Formation (Takla Group) to the northeast. A number of narrow feldspar porphyry and quartz feldspar porphyry dykes are found within the Telkwa rocks and appear to be spatially related to several showings in the area. Numerous shear zones of variable size crosscut the northwest trending major faults in the area. Two metamorphic events are recognizable: one is a low grade metamorphism relating to regional tectonism; and the other is a more localized event, related to the intrusion of dykes and sills.

The Barn showing is hosted in Lower Jurassic Telkwa Formation rocks, within a small northwest trending shear zone. The shear zone separates finely-banded purple tuffs and limestone to the east, from purple agglomerates to the west. The purple agglomerates strike northwest and dip 30 degrees to the southwest. Mineralization consists of malachite within the shear zone.

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EM OF 2001-18
EMPR ASS RPT *4710
EMPR GEM 1973-446,447
GSC MAP 962A
GSC MEM 251

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 424
REPORT: RGEN0100

BIBLIOGRAPHY

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GSC P 74-1 Part A; 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/07/13

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 085**

NATIONAL MINERAL INVENTORY: 094D16 Cu1

NAME(S): **NIKOS**, NIKOS 1-36

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 47 47 N
LONGITUDE: 126 25 55 W
ELEVATION: 1205 Metres

NORTHING: 6297663
EASTING: 656834

LOCATION ACCURACY: Within 500M

COMMENTS: Located on the Ingenika River approximately 1.6 kilometres above the mouth of McConnell Creek (Geology, Exploration and Mining in British Columbia, 1973, page 455).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Fleet Peak Pluton

LITHOLOGY: Volcanic
Granodiorite
Monzodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Nikos occurrence is located on the Ingenika River approximately 1.6 kilometres above the mouth of McConnell Creek (Geology, Exploration and Mining in British Columbia 1973, page 455).

Regionally, the area lies within the Quesnel Terrane, bounded to the east by the northwest trending Swannell fault and to the west by the north-northwest trending Ingenika fault. The area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanics and sediments. These are intruded by Early Jurassic and Early Cretaceous intermediate plutonic rocks.

Locally, volcanic rocks are intruded by the Early Jurassic Fleet Peak monzodiorite pluton, to the east.

Mineralization consists of chalcopyrite and pyrite in sheared volcanic rocks. The shears are near a small granodiorite intrusion.

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GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/05/05

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 086**

NATIONAL MINERAL INVENTORY: 094D8 Cu5

NAME(S): **PAD**, PAD 1-12

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08W 094D01W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 15 03 N
LONGITUDE: 126 18 35 W
ELEVATION: 1870 Metres

NORTHING: 6237252
EASTING: 666675

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 2 kilometres east of Mount Carruthers
(Assessment Report 5047).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Chalcocite	Bornite	Chalcopyrite	
ASSOCIATED:	Quartz	Epidote	Chlorite	Calcite
ALTERATION:	Malachite	Epidote	Chlorite	
ALTERATION TYPE:	Chloritic		Oxidation	Epidote
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER:	Vein	Stockwork	Disseminated	Massive
CLASSIFICATION:	Hydrothermal	Epigenetic		
TYPE:	D03	Volcanic redbed Cu		

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Chloritic Porphyritic Andesite
Andesitic Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Pad occurrence is located approximately 2 kilometres east of Mount Carruthers (Assessment Report 5047).

The occurrence is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. Sediments of the Upper Triassic Dewar Formation (Takla Group) conformably underlie the volcanics. The Permian Asitka Group underlies the Dewar Formation. These rocks form a conformable, northeast dipping, succession which is terminated to the northeast by the northwest trending Pinchi fault.

In the immediate area, siltstones and argillites of the Dewar Formation are overlain by andesitic flows with interflow tuffs. The flows are porphyritic (plagioclase) to aphanitic in texture. Minor amounts of pyroclastics and agglomerates occur in the area.

Disseminated chalcocite and bornite occur in andesites and massive bornite and chalcocite, with minor chalcopyrite and malachite, occur in epidote-quartz veins. The veins are hosted in fractured porphyritic andesites. Small stockworks of chlorite, epidote and calcite veinlets contain disseminated to massive chalcocite and bornite with minor chalcopyrite. These are hosted in chloritized andesitic tuffs.

Other similar showings are found within 1 kilometre to the north and to the south, along the ridge from the plotted location.

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GSC P 76-29
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/11

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

Coarse clastic rocks of the Middle to Upper Jurassic Bowser Lake Group unconformably overlie the arc assemblages. In turn, the Bowser Lake Group is unconformably overlain by a continental clastic sequence, the Upper Cretaceous to Eocene Sustut Group.

Structurally, the area lies west of the north-northwest trending Ingenika-Findlay fault which separates the Stikine and Quesnel terranes. To the east, the area is bounded by the north-northwest trending Moose Valley fault. Further west of the Moose Valley fault, the area is cut by numerous crosscutting thrust and normal faults, which strike northwest and northeast.

The stratified rocks have undergone regional greenschist metamorphism and are cut by ultramafic to intermediate intrusions of Late Triassic to Cretaceous age.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). The formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. The stratified rocks are intruded by the Early Jurassic Asitka Peak stock, which ranges from hornblende and/or biotite granodiorite to quartz diorite. These rocks are cut by feldspar porphyritic basic dykes, generally less than 3-metres thick (Assessment Report 5202).

Propylitic alteration is not very pronounced, but is more pervasive towards the northwest margin of the pluton. The alteration minerals present are chlorite, epidote, and pyrite. Minor calcite, siderite and specular hematite were also noted. Within this alteration zone, there are areas of extensive pyrite mineralization. Possible argillic and potassic alteration may be present near the northeastern contact and at the deeply eroded parts of the intrusive (Assessment Report 5202).

Chalcopyrite with minor bornite and associated pyrite and copper carbonates, occurs in fractures and epidote or quartz stringers within the intrusive. Malachite staining is present along the fractures and traces of magnetite and molybdenum occur on some fracture surfaces (Assessment Report 5437). The entire A-4 drill hole averages 0.035 per cent copper and a 3-metre intersection assayed 0.011 per cent molybdenum (Assessment Report 5437).

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DATE CODED: 1985/07/24
DATE REVISED: 1992/03/20

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

structures exhibit chlorite and epidote alteration over a couple of metres.

Numerous small showings and malachite stains are found in small patches related to the faults and andesite dykes. The faults typically carry chalcocite and lesser bornite, as discrete grains, in parallel veins of calcite and epidote. Copper minerals are found finely disseminated along chloritic shear zones up to 2-metres in width.

Amygdules in the andesitic flows are locally filled with quartz, calcite, epidote, chlorite, sericite, chalcocite and native copper (Assessment Report 4710).

A wide shear zone assayed 0.86 per cent copper and 17.14 grams per tonne silver over 1.53 metres (Assessment Report 4710). A grab sample, from one of the larger copper mineralized amygdules, assayed 1.98 per cent copper (Assessment Report 4710).

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DATE CODED: 1985/07/24
DATE REVISED: 1991/07/22

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 089**

NATIONAL MINERAL INVENTORY: 094D7 Cu6

NAME(S): **TIE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 27 10 N
LONGITUDE: 126 41 12 W
ELEVATION: 1860 Metres

NORTHING: 6258874
EASTING: 642571

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing #9, approximately 5 kilometres east of the confluence of Red Creek and the Sustut River (Assessment Report 4892).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite
ALTERATION: Malachite Chrysocolla
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Epigenetic
TYPE: D03 Volcanic redbed Cu L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Moosevale

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Altered Andesitic Tuff
Hornblende Feldspar Porphyry Dike
Pyroclastic
Conglomerate
Breccia
Sandstone
Tuff
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Rock

COMMODITY

GRADE

Copper

0.2600

Per cent

COMMENTS: Sample from andesitic tuff collected during the 1973 field season.

REFERENCE: Assessment Report 4892, Map 2 - Copper Geochemistry.

CAPSULE GEOLOGY

The Tie occurrence is located approximately 5 kilometres east of the confluence of Red Creek and the Sustut River (showing #9, Assessment Report 4892).

Mineralization is hosted in Upper Triassic Moosevale Formation (Takla Group) volcanics and sediments. These rocks consist of andesitic and basaltic conglomerate, breccia, sandstone, tuff, and argillite. The rocks are bounded to the north by a west-northwest trending fault. Across this fault, Upper Triassic Dewar Formation (Takla Group) tuffs, sandstones and argillites are found. The strata lie within a large triangle defined by 3 major faults in the area; the north-northwest trending Sustut River fault, the northwest trending Pinchi fault, and the west trending Asitka River thrust fault.

Locally, a small hornblende feldspar porphyry dyke, striking approximately 150 degrees, cuts through pyroclastics. The dyke, exposed over a width of 15.24 metres for a length of 152.4 metres, is terminated to the east by a north-northwest trending fault (Assessment Report 4892). Approximately 600 metres to the south,

CAPSULE GEOLOGY

altered andesitic tuff occurs near a shear zone.
Disseminated chalcopyrite, chrysocolla, bornite, and pyrite occur in the porphyry and disseminated chalcopyrite and malachite are found in andesitic tuff. A rock sample from the andesitic tuff assayed 0.26 per cent copper (Assessment Report 4892).

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DATE CODED: 1985/07/24
DATE REVISED: 1991/08/07

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 090**

NATIONAL MINERAL INVENTORY: 094D16,9 Cu2

NAME(S): **ARD**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W 094D16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 44 48 N
LONGITUDE: 126 29 53 W
ELEVATION: 1930 Metres

NORTHING: 6291981
EASTING: 653000

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a north flowing tributary of Menard Creek (Assessment Report 4707).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Pyrite Serpentine Chlorite
ALTERATION TYPE: Pyrite Propylitic Serpentin'zn Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Aphanitic Andesite
Porphyritic Andesite
Altered Andesite
Granodiorite
Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Ard occurrence is located on a north flowing tributary of Menard Creek, west of the Ingenika River (Assessment Report 4707). The regional geology and structure are similar to that of the A-4 occurrence (094D 087).

Locally, the area is cut by a north trending fault that separates andesitic rocks of the Upper Triassic Savage Mountain Formation (Takla Group), to the west, from an undifferentiated package of Upper Triassic volcanics (Takla Group), to the east. Both volcanic packages are represented by aphanitic to porphyritic (feldspar) andesites (Assessment Report 4707). The undifferentiated volcanics are cut by a medium-grained gabbro with phenocrysts of plagioclase feldspar and pyroxene (Assessment Report 4707).

The Savage Mountain volcanics are cut by northwest trending dykes of pink porphyritic granodiorite that contain hornblende and plagioclase phenocrysts in a matrix of quartz, plagioclase and orthoclase (Assessment Report 4707). Close to the north trending fault, which the dykes terminate against, the matrix is chlorite altered. A 60-metre pyritic and propylitic envelope exists on either side of the fault (Assessment Report 4707). A serpentinite altered zone is developed around the gabbro intrusion and is more pervasive near the fault. Serpentinization overlaps on both sides of the fault and is fairly widespread near the basic intrusion.

Mineralization consists of chalcopyrite in pyritic shears near the margin of a granodiorite dyke.

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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 434
REPORT: RGEN0100

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DATE CODED: 1985/07/24
DATE REVISED: 1992/04/08

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 091**

NATIONAL MINERAL INVENTORY: 094D16 Cu3

NAME(S): **DWG COPPER**, BEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D16W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 51 18 N
LONGITUDE: 126 29 05 W
ELEVATION: 1255 Metres

NORTHING: 6304072
EASTING: 653370

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 3 kilometres downstream from the lowermost of the McConnell lakes (Assessment Report 5744).

COMMODITIES: Gold Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

DIMENSION: 15 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: The B vein is traceable for 15 metres.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Lower Jurassic

Fleet Peak Pluton

LITHOLOGY: Granodiorite
Quartz Gabbro
Pegmatite Dike
Aplite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: B

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1975

SAMPLE TYPE: Chip

COMMODITY

GRADE

Silver

156.0000

Grams per tonne

Gold

156.0000

Grams per tonne

Copper

6.6000

Per cent

COMMENTS: One of the best samples, taken across 0.91 metre.

REFERENCE: Assessment Report 5744.

CAPSULE GEOLOGY

The DWG Copper occurrence straddles McConnell Creek and is located approximately 3 kilometres downstream of the lowermost McConnell lakes (Assessment Report 5744).

The regional geology is similar to that of the Gerle Gold deposit (094D 006).

Locally, the area is underlain by sheared granodiorite and quartz gabbro of the Lower Jurassic Fleet Peak pluton (Geology, Exploration and Mining in British Columbia 1973, pages 447-455). The granodiorite is generally schistose and is composed predominantly of zoned, subhedral plagioclase crystals (2 to 4 millimetres in diameter) quartz and orthoclase. The quartz gabbro is composed of (in decreasing order of abundance); plagioclase, hornblende, quartz and orthoclase. The gabbro contains minor pyrite and exhibits epidotization near pegmatite and aplite dykes. The main direction of fracturing strikes 160 degrees and dips 60 degrees northeast (Geology, Exploration and Mining in British Columbia 1973, pages 447-455). Several sets of cross joints are weakly developed and these host most of the mineralization.

Five sulphide showings are exposed within a radius of approximately 200 metres. Showing A (or Zone A) is the only showing found on the east side of McConnell Creek, the other 4 occur on the

CAPSULE GEOLOGY

west side. All the showings are quartz vein and fracture-related and the most significant is the B showing.

Zone B or showing B is a quartz vein hosting chalcopyrite and pyrite. The vein is traceable for 15 metres and has a variable strike and thickness (Geology, Exploration and Mining in British Columbia 1973, pages 447-455). The southwest extremity of the vein strikes 68 degrees, dips 65 degrees northeast and is approximately 3.7 metres in thickness. The strike changes to 62 degrees at the northeast end and the vein widens to approximately 4.6 metres (447-455).

One of the best chip samples across 0.91-metre assayed 6.60 per cent copper, 156.00 grams per tonne silver and 156.00 grams per tonne gold (Assessment Report 5744).

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DATE CODED: 1985/07/24
DATE REVISED: 1992/05/06

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 092**

NATIONAL MINERAL INVENTORY:

NAME(S): **LADY DIANA**

MINING DIVISION: Omineca

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094D08E
 BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 27 06 N
 LONGITUDE: 126 02 13 W
 ELEVATION: 1950 Metres

NORTHING: 6260287
 EASTING: 682607

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a south facing ridge north of Kliyul Creek, approximately 15 kilometres east of Dortatelle Peak (Assessment Report 21521).

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Sphalerite Galena

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Disseminated Shear

CLASSIFICATION: Hydrothermal Porphyry Epigenetic

DIMENSION: 200 x 200 Metres STRIKE/DIP:

COMMENTS: The stockwork system is approximately 200 by 200 metres (Assessment Report 21521). TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Kliyul Creek Body
Lower Cretaceous			

LITHOLOGY: Meta Andesitic Volcanic
 Andesite
 Quartz Diorite
 Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Quesnel

METAMORPHIC TYPE: Contact

RELATIONSHIP:

GRADE: Hornfels

INVENTORY

ORE ZONE: STOCKWORK REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1991

SAMPLE TYPE: Grab

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	44.8000	Grams per tonne
Gold	2.4800	Grams per tonne
Copper	2.6980	Per cent

COMMENTS: A grab sample from the Lady Diana stockwork zone.

REFERENCE: Assessment Report 21521.

CAPSULE GEOLOGY

The Lady Diana occurrence is located on a south facing slope of Porphyry Ridge north of Kliyul Creek, approximately 15 kilometres east of Dortatelle Peak (Assessment Report 21521). The occurrence is approximately 1.5 kilometres southeast of the South Soup skarn occurrence (094D 105).

Regionally, the area lies within the Quesnel Terrane and is underlain by mainly submarine basaltic and andesitic island arc volcanics and sediments of the Upper Triassic to Lower Jurassic Takla Group (Assessment Report 21394). These stratified rocks have undergone regional greenschist metamorphism and are cut by ultramafic to intermediate intrusions of Upper Triassic to Cretaceous age (Assessment Report 21394). The area is bounded to the west by the north trending Dortatelle fault. Smaller, more localized structures trend northwest.

Locally, the occurrence lies within a metamorphic aureole on the northern edge of the Early Cretaceous Kliyul Creek quartz diorite to granodiorite body. This intrusive body is typically light grey and medium-grained with equigranular intergrowths of plagioclase, quartz,

CAPSULE GEOLOGY

potassium feldspar and biotite (Assessment Report 21521). The body exhibits a potassic zonation, which decreases in biotite and grain size and increases in potassium feldspar content from the center to the northern contact (Assessment Report 21521). This contact is sharp and locally offset by small northeast faults. The metamorphosed host rocks are Upper Triassic to Lower Jurassic Takla Group volcanics which, in this area, are predominantly andesitic in composition. The rocks are cut by northwest trending faults.

The Lady Diana occurrence consists of a 200 by 200 metre stockwork zone hosting pyrite and chalcopyrite. The sulphides are found within quartz stringers, as disseminations and fracture fillings. (Assessment Report 21521). The zone parallels the intrusive contact and is bounded to the north by a northwest striking fault informally named the South Bear Creek fault (Assessment Report 21521). The mineralization is spotty and erratic. A grab sample assayed 2.48 grams per tonne gold, 44.8 grams per tonne silver and 2.698 per cent copper (Assessment Report 21521).

There are numerous occurrences of chalcopyrite with associated pyrite, located just to the east, north of the South Bear Creek fault. These occurrences are found in stringers and shears within andesitic volcanics. Sphalerite and galena occur locally with chalcopyrite in the shear zones (Assessment Report 21521).

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GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1992/03/17
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 093**

NATIONAL MINERAL INVENTORY: 094D8 Cu7

NAME(S): **MAR, LEN, MAR 3**

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D08W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 17 07 N
LONGITUDE: 126 23 09 W
ELEVATION: 1890 Metres

NORTHING: 6240902
EASTING: 661815

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of drilled mineralization, approximately 4 kilometres northwest of Mount Carruthers, on the Mar 3 claim (Assessment Report 5569).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Bornite Pyrite
ASSOCIATED: Pyrite
ALTERATION: Epidote Calcite Chlorite Sericite
ALTERATION TYPE: Epidote Chloritic Sericitic Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: E04 Sediment-hosted Cu
DIMENSION: D03 Volcanic redbed Cu
STRIKE/DIP: 130/50N TREND/PLUNGE:
COMMENTS: The strike and dip is the general orientation of the strata on the property (Assessment Report 5229).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Telkwa

LITHOLOGY: Tuffaceous Argillite
Augite Porphyry
Dacite Porphyry
Pyroclastic
Agglomerate
Tuffaceous Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1974
SAMPLE TYPE: Channel
COMMODITY GRADE
Copper 5.6000 Per cent

COMMENTS: A 1.5-metre channel sample of tuffaceous argillite from the drill location.

REFERENCE: Assessment Report 5229.

CAPSULE GEOLOGY

The Mar occurrence is located approximately 4 kilometres northwest of Mount Carruthers, centered on the drilled mineralization on the Mar 3 claim (Assessment Report 5569).

The occurrence is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. The Telkwa Formation, in this area, overlies the Upper Triassic Dewar Formation (Takla Group) and the Permian Asitka Group. The rocks of these two formations, together with the older Asitka Group, forms a conformable northeast dipping succession.

The immediate area is underlain by Telkwa Formation pyroclastic and volcanic flows with minor sedimentary rocks. The pyroclastic rocks range from coarse agglomerates to fine-grained tuffaceous argillites. The volcanic rocks are predominantly augite porphyry to dacite porphyry. The strata on the property has a general strike of 130 degrees and dips 50 degrees northeast (Assessment Report 5229). The Telkwa Formation is bounded to the northeast by the Pinchi fault.

CAPSULE GEOLOGY

Localized faults in the area trend northeast and parallel the major faults. The host rocks are intensely fractured in places. The dominant host rock is a bedded, fine-grained, tuffaceous argillite, which is locally altered. The other host rock is augite porphyry, which overlies the argillite.

Alteration minerals include epidote, calcite, chlorite and sericite which are often associated with the mineralization. Chalcopyrite, chalcocite and bornite, with associated pyrite, occurs disseminated in fractures, in tuffaceous argillites, and in augite porphyry.

Mineralization also occurs on the ridge, approximately 750 metres to the northwest, in about the same stratigraphic position. The mineralized porphyry is located northeast of the mineralized argillites and lies stratigraphically above this horizon.

A 1.5-metre channel sample, from the drilled location, assayed 5.6 per cent copper (Property File - Map of the Mar-Len Claims Group, Pechiney Developments Ltd., 1974).

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GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/12

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 094**

NATIONAL MINERAL INVENTORY:

NAME(S): **ASITKA 29**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 36 57 N
LONGITUDE: 126 25 47 W
ELEVATION: 1785 Metres

NORTHING: 6277578
EASTING: 657723

LOCATION ACCURACY: Within 500M

COMMENTS: Located on the 1974 Asitka 29 claim (Assessment Report 5202).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	Asitka Peak Stock
Lower Jurassic			

LITHOLOGY: Intermediate Porphyry Flow
Chloritic Tuff
Agglomerate
Epiclastic Sediment/Sedimentary
Granodiorite Dike
Quartz Diorite

HOSTROCK COMMENTS: The intrusive is informally named the Asitka Peak stock.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Asitka 29 occurrence is located within the Asitka 29 claim unit (Assessment Report 5202). The showing is on a north trending ridge approximately 3 kilometres north of Asitka Peak.

The regional geology is similar to that of the A-4 occurrence (094D 087), which is approximately 1.5 kilometres to the southeast.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). The formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. The stratified rocks are intruded to the south by the Early Jurassic Asitka Peak stock. This stock ranges from hornblende and/or biotite granodiorite to quartz diorite. These are cut by mafic dykes, generally less than 3 metres thick, which are finely feldspar porphyritic (Assessment Report 5202).

Mineralization occurs near the northern contact of the intrusion. A small, local fault and granodioritic dykes trend northwest and parallel the intrusive-volcanic contact.

Chalcopyrite and bornite are disseminated in the volcanics. Malachite staining is associated with mineralized areas.

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GSC MAP 962A
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RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 442
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/26

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 095**

NATIONAL MINERAL INVENTORY:

NAME(S): **ASITKA 33**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 36 56 N
LONGITUDE: 126 27 24 W
ELEVATION: 1850 Metres

NORTHING: 6277486
EASTING: 656072

LOCATION ACCURACY: Within 500M

COMMENTS: Located on the 1974 Asitka 33 claim (Assessment Report 5202).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Porphyry
TYPE: D03 Volcanic redbed Cu L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Lower Jurassic

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Asitka Peak Stock

LITHOLOGY: Intermediate Porphyry Flow
Chloritic Tuff
Agglomerate
Epiclastic Sediment/Sedimentary
Hornblende Biotite Granodiorite
Quartz Diorite
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Asitka 33 occurrence is located within the Asitka 33 claim unit (Assessment Report 5202). The showing occurs on a northwest trending ridge, approximately 3 kilometres northwest of Asitka Peak.

The regional geology is similar to that of the A-4 occurrence (094D 087), which is approximately 2.5 kilometres to the northeast.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). This formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. The stratified rocks are intruded by the Early Jurassic Asitka Peak stock. The stock ranges from hornblende and/or biotite granodiorite to quartz diorite. The rocks are cut by mafic dykes, generally less than 3 metres thick, which are finely feldspar porphyritic (Assessment Report 5202).

Chalcopyrite and bornite are disseminated in the volcanics and in northwest trending quartz veins. These showings are in close proximity to the main intrusive body. Malachite staining is associated with mineralized areas.

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EMPR GEM 1973-410; 1974-304
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/26

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 095**

MINFILE NUMBER: **094D 096**

NATIONAL MINERAL INVENTORY: 094D9 Cu2

NAME(S): **ASITKA 19**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 36 05 N
LONGITUDE: 126 25 34 W
ELEVATION: 1980 Metres

NORTHING: 6275980
EASTING: 658005

LOCATION ACCURACY: Within 500M

COMMENTS: Located on the Asitka 19 claim (Assessment Report 5202).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz Chalcedony
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Shear
CLASSIFICATION: Hydrothermal Epithermal
TYPE: L04 Porphyry Cu ± Mo ± Au D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Lower Jurassic

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Asitka Peak Stock

LITHOLOGY: Intermediate Porphyritic Flow
Chloritic Tuff
Agglomerate
Epiclastic Sediment/Sedimentary
Hornblende Biotite Granodiorite
Quartz Diorite
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Asitka 19 occurrence is located within the Asitka 19 claim unit (Assessment Report 5202). The showing is approximately 400 metres east of Asitka Peak and 15 kilometres west of Johanson Lake.

The regional geology is similar to that of the A-4 occurrence (094D 087), which is approximately 1 kilometre to the northeast.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). This formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. These stratified rocks are intruded by the Early Jurassic Asitka Peak stock. The stock ranges from hornblende and/or biotite granodiorite to quartz diorite. The rocks are cut by mafic dykes, generally less than 3 metres thick, which are finely feldspar porphyritic (Assessment Report 5202).

Copper mineralization is hosted within northwest trending quartz and chalcedony veins. The veins are associated with shear zones and stockworks which cut the volcanic rocks. The veins, stockworks and shears are typically malachite-stained and contain chalcopyrite and bornite (Assessment Report 5202). The veins occur in close proximity to the southwest boundary of the intrusion.

A zone of similar mineralization exists for approximately 300 metres to the southeast.

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT 4603,4753, *5202, *5437, 9546, 20006
EMPR GEM 1973-410; 1974-304
GSC MAP 962A
GSC MEM 251

RUN DATE: 26-Jun-2003
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BIBLIOGRAPHY

GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/25

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 097**

NATIONAL MINERAL INVENTORY:

NAME(S): **ASITKA 25**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 36 41 N
LONGITUDE: 126 25 57 W
ELEVATION: 1700 Metres

NORTHING: 6277078
EASTING: 657571

LOCATION ACCURACY: Within 500M

COMMENTS: Located on the Asitka 25 claim (Assessment Report 5202, 9546).

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite
ALTERATION: Sericite Pyrite
ALTERATION TYPE: Sericitic Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	Asitka Peak Stock
Lower Jurassic			

LITHOLOGY: Hornblende Biotite Granodiorite
Quartz Diorite
Volcanic
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Asitka 25 occurrence is located within the Asitka 25 claim (Assessment Report 5202). The showing is approximately 1.5 kilometres north of Asitka Peak and 15 kilometres west of Johanson Lake.

The regional geology is similar to that of the A-4 occurrence (094D 087), which is approximately 1 kilometre to the east.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). This formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. The stratified rocks are intruded by the Early Jurassic Asitka Peak stock. The stock ranges from hornblende and/or biotite granodiorite to quartz diorite. These rocks are cut by mafic dykes, generally less than 3 metres thick, which are finely feldspar porphyritic (Assessment Report 5202).

Molybdenite and chalcopyrite are disseminated and fill fractures, in the intrusive, associated with sericite and pyrite alteration (Assessment Report 9546).

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GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/26

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 098**

NATIONAL MINERAL INVENTORY:

NAME(S): **ASITKA 60**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 35 42 N
LONGITUDE: 126 23 31 W
ELEVATION: 1725 Metres

NORTHING: 6275348
EASTING: 660129

LOCATION ACCURACY: Within 500M

COMMENTS: Located on the 1974 Asitka 60 claim, approximately 2.5 kilometres east-southeast of Asitka Peak and approximately 2 kilometres southeast of the A-4 (094D 087) occurrence (Assessment Report 5202).

COMMODITIES: Copper Magnetite Iron

MINERALS

SIGNIFICANT: Chalcopyrite Magnetite
ALTERATION: Epidote Actinolite Quartz Calcite Malachite
ALTERATION TYPE: Carbonate Oxidation Epidote Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Disseminated Massive
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn D03 Volcanic redbed Cu
L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Savage Mountain	Asitka Peak Stock
Lower Jurassic			

LITHOLOGY: Altered Volcanic
Dike
Quartz Diorite
Hornblende Biotite Granodiorite
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Asitka 60 occurrence is located approximately 2.5 kilometres east-southeast of Asitka Peak.

The regional geology is similar to that of the A-4 occurrence (094D 087), which is approximately 2 kilometres to the northwest.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). This formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. These stratified rocks are intruded by the Early Jurassic Asitka Peak stock. The stock ranges from hornblende and/or biotite granodiorite to quartz diorite. These rocks are cut by mafic dykes, generally less than 3 metres thick, which are finely feldspar porphyritic (Assessment Report 5202). The volcanics are cut by thin east-trending granodiorite to quartz diorite dykes.

Mineralization occurs near the contact between volcanic and intrusive rocks. Copper mineralization is hosted within epidote, actinolite, quartz and calcite-bearing altered volcanics. A massive magnetite lens, a little over 1-metre wide, is associated with disseminated chalcopyrite and copper carbonate-bearing skarned volcanics (Assessment Report 5202). Massive, lenticular chalcopyrite, approximately 0.45 metre wide, occurs less than 65 metres to the south of the magnetite lens (Assessment Report 5202). Malachite staining is common.

BIBLIOGRAPHY

EMPR GEM 1973-410; 1974-303
EMPR ASS RPT 4603, 4753, *5202, *5437, 9546, 20006
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GSC MAP 962A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

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BIBLIOGRAPHY

GSC MEM 251, p. 62
GSC OF 342

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/20

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 099**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOB**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 35 29 N
LONGITUDE: 126 26 47 W
ELEVATION: 1600 Metres

NORTHING: 6274820
EASTING: 656802

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 1 kilometre southwest of Asitka Peak (Assessment Report 5202).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Intermediate Porphyry Flow
Chloritic Tuff
Agglomerate
Epiclastic Sediment/Sedimentary
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Bob occurrence is located within the Bob claims (Assessment Report 5202), approximately 1 kilometre southwest of Asitka Peak and 15 kilometres west of Johanson Lake.

The regional geology is similar to that of the A-4 occurrence (094D 087), which is approximately 3 kilometres to the northeast.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). This formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. These stratified rocks are intruded by the Early Jurassic Asitka Peak stock. The stock ranges from hornblende and/or biotite granodiorite to quartz diorite. These rocks are cut by mafic dykes, generally less than 3 metres thick, which are finely feldspar porphyritic (Assessment Report 5202).

Chalcopyrite occurs in malachite-stained volcanic rocks, which lie to the southwest of a local northwest trending shear (Assessment Report 5202).

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EMPR GEM 1973-410; 1974-304
GSC MAP 962A
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GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/26

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 100**

NATIONAL MINERAL INVENTORY: 094D9 Cu7

NAME(S): **SIT**, ASITKA (WESFROB), ASITKA 125,
ASITKA 127

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 28 N
LONGITUDE: 126 28 49 W
ELEVATION: 1600 Metres

NORTHING: 6267295
EASTING: 654995

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of 1974 drilling located between Asitka 125 and 127 claims
(Geology, Mining and Exploration in British Columbia, 1974 and
Mineral Titles Claim Map for 094D/9W, 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite

ASSOCIATED: Carbonate

COMMENTS: Also copper carbonates present.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP
Upper Triassic Takla

FORMATION
Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Aphanitic Basaltic Flow
Amygdaloidal Basalt
Pillow Augite Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Sit occurrence is located on a south facing slope, approximately 4 kilometres southwest of Sustut Lake, at approximately 1600 metres elevation.

The area lies within a fault block, which is bounded to the east by the north-northwest trending Ingenika fault, to the north by the northeast trending Sustut River fault, to the west by an unnamed northwest trending fault and to the south by the north trending Quenada thrust fault.

Within the fault block a southwest dipping stratigraphic succession is formed. From east to west, the stratigraphy begins with the Upper Triassic Takla Group: the Moosevale Formation overlies the Savage Mountain Formation and the Dewar Formation underlies both of these. The basement to the Takla Group in the fault block is the Permian Asitka Group. Both of these groups generally contain volcanics, volcanoclastics and sediments.

The Sit occurrence is hosted within pillowed augite basalts, aphanitic basaltic flows and amygdaloidal basalts of the Upper Triassic Savage Mountain Formation. Volcanic siltstones, argillites and intercalated basaltic tuffs of the Dewar Formation conformably underlie these volcanics.

Chalcopyrite, bornite and chalcocite occur in calcareous fractures and amygdules within aphanitic basaltic flows and amygdaloidal basalts. Copper carbonates are also present within the fractures and amygdules (Geology, Mining and Exploration in British Columbia 1974, page 303).

BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT 4786
EMPR GEM *1973-410-416; *1974-303,305-309
EMPR Mineral Titles 1973 Claim Map for 094D/09W'
GSC MAP 962A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 451
REPORT: RGEN0100

BIBLIOGRAPHY

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GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/30

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 101**

NATIONAL MINERAL INVENTORY: 094D9 Cu4

NAME(S): **BIRD**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W 094D16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 44 50 N
LONGITUDE: 126 20 25 W
ELEVATION: 1535 Metres

NORTHING: 6292406
EASTING: 662643

LOCATION ACCURACY: Within 500M

COMMENTS: Diamond drill hole BDH 79-1 (Assessment Report 7505).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT:	Chalcopyrite	Molybdenite	Pyrite		
ASSOCIATED:	Quartz	Epidote	Calcite		
ALTERATION:	Malachite	Calcite	Sericite	Quartz	Epidote
	Chlorite	Pyrophyllite			
ALTERATION TYPE:	Oxidation	Argillic		Propylitic	Sericitic
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Tabular
MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Fleet Peak Pluton
Lower Jurassic			Unnamed/Unknown Informal
Lower Cretaceous			

LITHOLOGY: Andesitic Tuff
Andesitic Flow
Altered Andesite
Quartz Diorite Porphyry
Diorite
Diorite Porphyry
Augite Porphyry
Hornblende Porphyry
Hornblende Diorite
Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
COMMODITY: Copper
GRADE: 0.1800
YEAR: 1979
Per cent

COMMENTS: A 3-metre drill interval from drill hole BDH 79-1.
REFERENCE: Assessment Report 7505.

CAPSULE GEOLOGY

The Bird occurrence, located on the 1979 diamond drill hole BDH 79-1, is approximately 6 kilometres southwest of Fleet Peak (Assessment Report 7505).

The regional geology is similar to that of the Shred occurrence (094D 111).

Locally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group andesitic flows and tuffs, augite porphyry and hornblende porphyry. These rocks have been intruded by diorite, quartz diorite, hornblende diorite, quartz diorite porphyry and diorite porphyry related to the Early Jurassic Fleet Peak pluton and an unnamed Early Cretaceous stock. The dioritic rocks occur predominantly as dykes and sills. The rocks generally form west-

CAPSULE GEOLOGY

northwest trending lenticular slivers which are cut by, west-northwest trending, local faults.

Alteration, generally phyllic and argillic, becomes increasingly propylitic at depth. Alteration minerals include sericite, quartz, epidote, chlorite, pyrophyllite and calcite.

On the Bird claims, two diamond drill holes were drilled in 1976 and four were drilled in 1979, all within 600 metres of each other.

Chalcopyrite, pyrite and molybdenite are generally found in veins, veinlets and fractures in volcanic and plutonic rocks. The veins, typically malachite-stained, are composed of quartz, epidote and calcite. The chalcopyrite tends to occur within the pyrite blebs.

One of the best drill intersections was from hole BDH 79-1 which assayed 0.18 per cent copper over 3 metres (Assessment Report 7505).

BIBLIOGRAPHY

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EMPR ASS RPT *5254, 5661, *7505, 13316
EMPR PF (Orthophoto Map, Fleet Peak, BP Minerals Ltd., 1974)
GSC MEM 251
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/24

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 102**

NATIONAL MINERAL INVENTORY: 094D7 Cu3

NAME(S): **A462**, A, PARK 3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D07E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 27 30 N
LONGITUDE: 126 33 51 W
ELEVATION: 1550 Metres

NORTHING: 6259753
EASTING: 650097

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the main showing on the A462 claim (Assessment Report 4855).

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcocite Copper Bornite Chalcopyrite
ASSOCIATED: Calcite Quartz
ALTERATION: Azurite Malachite Silica
ALTERATION TYPE: Oxidation Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu
COMMENTS: The main showing lies within a major northwest trending syncline (Assessment Report 5402).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Siliceous Rhyolite Tuff
Massive Ash Tuff
Lapilli Tuff
Bedded Tuff
Vitric Tuff
Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY
Silver
Copper

GRADE	
188.5000	Grams per tonne
8.7000	Per cent

COMMENTS: Highest values from 12 samples.
REFERENCE: Assessment Report 21856.

CAPSULE GEOLOGY

The A462 occurrence is located near a northwest draining tributary of Willow Creek, approximately 11 kilometres southeast of the confluence of Willow Creek and the Sustut River. The Pluto occurrence (094D 075), located about 3.5 kilometres to the northwest, is similar to this one.

Regionally, the area is underlain by Lower Jurassic Telkwa Formation (Hazelton Group) volcanics and pyroclastics. Here, the Telkwa Formation is bounded to the northwest by the Sustut River fault; to the northeast by the Pinchi fault and to the southwest by a northwest-trending thrust fault. Upper Triassic Dewar Formation (Takla Group) tuffs and sediments lie on the other side of the thrust fault.

Locally, Telkwa Formation pyroclastics include massive ash and lapilli tuffs, minor vitric tuffs and bedded tuffs. A fine-grained, light pinkish grey and silicified rhyolite tuff is interbedded with the pyroclastics. The rhyolite is approximately 91.5 metres wide and has been traced for a length of 275 metres. The predominant rock type immediately to the south is agglomerate. The rocks are folded

CAPSULE GEOLOGY

in a large northwest-trending syncline which is locally cut by northeast-trending faults.

Mineralization consists of chalcocite, bornite, chalcopyrite, native copper, azurite and malachite. Most of the mineralization occurs in fracture fillings and to a lesser extent, disseminations. Approximately 30 per cent of the chalcocite grains, the most common copper sulphide, have native copper cores (Assessment Report 5402).

The rhyolite tuff contains disseminated chalcocite and a mixture of other copper sulphides in fracture fillings. Thirteen other mineral occurrences are within 125 metres of the tuff, predominantly associated with quartz and calcite veinlets and veins of varying sizes. Quartz-calcite stockwork zones are common in the claim area.

One of the best samples assayed 7.5 per cent copper, 0.17 gram per tonne gold and 168 grams per tonne silver (Assessment Report 4855). Twelve samples, taken in 1991, assayed up to 8.7 per cent copper and 188.5 grams per tonne silver (Assessment Report 21856).

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GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/08

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 103**

NATIONAL MINERAL INVENTORY:

NAME(S): **SPUR**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D02W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 02 26 N
LONGITUDE: 126 49 48 W
ELEVATION: 1700 Metres

NORTHING: 6212717
EASTING: 635184

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization near the southeast corner of the Spur 4 claim (Assessment Report 6503).

COMMODITIES: Copper Silver Lead

MINERALS

SIGNIFICANT: Chalcocite Bornite Chalcopyrite Galena Covellite
ALTERATION: Hematite
ALTERATION TYPE: Hematite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Telkwa

LITHOLOGY: Andesite
Basalt
Conglomerate
Sandstone
Siltstone
Amygdaloidal Volcanic
Porphyritic Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Takla Trench

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1978

COMMODITY	GRADE	
Silver	48.3400	Grams per tonne
Copper	2.3600	Per cent

COMMENTS: A 5.79-metre drill interval.
REFERENCE: Property File - Vincent, J.S., 1978, Letter.

CAPSULE GEOLOGY

The Spur occurrence is located near the ridge top approximately due west of the southern tip of Bear Lake.

Regionally, Lower Jurassic Telkwa Formation rocks are intruded by a quartz-monzonite stock of the Eocene Kastberg Intrusions. A potassium-argon date of 53 Ma has been obtained from the Kastberg Intrusions (Geological Survey of Canada Open File 342). The major faults in the area trend northwest, dip steeply to the west and separate rock types of different groups. The strata strikes northwest and dips moderately to the northeast.

Locally, the Spur claims are underlain by northwest trending Telkwa Formation (Hazelton Group) basic to intermediate volcanics and interflow volcanoclastics. Intercalated andesites and basalts, with variably hematized plagioclase, are locally amygdaloidal or porphyritic. Pyroxene phenocrysts are found in some of the porphyritic phases. Conglomerates, sandstones and siltstones exhibit: cross-bedding; convoluted bedding; load casts; channeling; grading in individual beds; and bed disruption near volcanic domes. Smaller, localized, east-trending faults are associated with the major faults.

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CAPSULE GEOLOGY

Mineralization occurs as disseminations in volcanics, volcaniclastics and fracture fillings. The most prevalent sulphides are chalcocite, covellite, bornite and chalcopyrite. Galena is the only other sulphide found. The mineralization is strongly associated with the contacts between the volcanics and volcaniclastics (Assessment Report 5681).

A 5.79-metre drill intersection assayed 2.36 per cent copper and 48.34 grams per tonne silver (Property File - Vincent, J. S., 1978, Letter).

BIBLIOGRAPHY

EMPR ASS RPT *5681, *6503
EMPR EXPL 1975-E159, E160; 1977-E214; 1978-E242
EMPR MEIP 78/79
EMPR PF (*Vincent, J. S., (1978): Letter and Report on Diamond Drilling Program, Spur Claims, Canadian Nickel Company Limited)
GSC MAP 962A
GSC MEM 251
GSC OF 342; 2232
GSC P 76-29
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/30

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 104**

NATIONAL MINERAL INVENTORY: 094D3 Cu6

NAME(S): **RED (SPING)**

STATUS: Developed Prospect

MINING DIVISION: Omineca

REGIONS: British Columbia

NTS MAP: 094D03E

BC MAP:

LATITUDE: 56 14 36 N

LONGITUDE: 127 10 52 W

ELEVATION: 1140 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6234650

EASTING: 612719

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization (drill hole 73-3) on a knoll north of the Squingula River (Assessment Report 20364 and 15861).

COMMODITIES: Copper

Silver

Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite

ASSOCIATED: Carbonate

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated

CLASSIFICATION: Replacement Sedimentary

TYPE: E04 Sediment-hosted Cu

D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Jurassic

GROUP

Hazelton

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Fossiliferous Dolomitic Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: A

REPORT ON: Y

CATEGORY: Indicated
QUANTITY: 4989050 Tonnes

YEAR: 1973

COMMODITY

Silver

Copper

GRADE

11.9000

0.5000

Grams per tonne

Per cent

COMMENTS: Outlined.

REFERENCE: Prospectus, Windflower Mining Ltd., February 1, 1985.

CAPSULE GEOLOGY

The Spring occurrence is located approximately 18 kilometres north of Motase Peak, on a small knoll north of the Squingula River.

The area lies on the eastern edge of the Bowser basin and is hosted in Lower to Middle Jurassic Hazelton Group rocks. The host rock is fossiliferous, stylonitic, dolomitic limestone. This intravolcanic reefal limestone is more than 30 metres thick in this area (Assessment Report 20364).

The carbonate contains about 2 to 5 per cent finely disseminated chalcopyrite, pyrite and minor bornite. Calculated from previous drilling, indicated reserves are 4,989,050 tonnes grading 0.5 per cent copper and 11.9 grams per tonne silver (Prospectus, Windflower Mining Ltd., February 1, 1985). A preliminary flotation test indicated that a concentrate grade of 24 per cent copper, 8 grams per tonne gold and 1022.4 grams per tonne silver could be achieved (Assessment Report 20364).

BIBLIOGRAPHY

EMPR ASS RPT 4562, 5552, 5946, *15861, *20364, *23227
EMPR EXPL 1987-C324
EMPR FIELDWORK 1976 p. 65
EMPR GEM 1973-404; 1975-E160; 1976-E172
EMPR GEOLOGY 1976-109
EMPR OF 1994-14, 2001-18
EMR CORPFILE (Windflower Mining Ltd.)
EMR MIN BULL MR 223 B.C. 261
GSC OF 342

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RUN TIME: 11:51:27

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BIBLIOGRAPHY

GSC P 73-31; 76-29
CJES VOL 14, pp. 2414-2421
Placer Dome File
EMPR OF 1998-10

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/16

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 105**

NATIONAL MINERAL INVENTORY: 094D8 Cu2

NAME(S): **SOUP**, SOUTH SOUP, SOUP 1-10,
SOUP 13, SADDLE GULLY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 56 27 22 N
LONGITUDE: 126 03 05 W
ELEVATION: 1995 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6260743
EASTING: 681696

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the southern skarn zone on the Soup 13 claim (Property File - Athlone Resources Ltd., Prospectus, 1988). See also Soup, 094D 025.

COMMODITIES: Gold Copper Iron Magnetite

MINERALS

SIGNIFICANT:	Chalcopyrite	Magnetite	Pyrite		
ASSOCIATED:	Quartz	Actinolite	Garnet	Epidote	
ALTERATION:	Epidote	Actinolite	Garnet	Malachite	Azurite
	Hematite				
ALTERATION TYPE:	Skarn	Oxidation			
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER:	Massive	Stratiform	Vein	Podiform
CLASSIFICATION:	Skarn	Industrial Min.		
TYPE:	K01 Cu skarn		K04	Au skarn
	K03 Fe skarn			
SHAPE:	Tabular			
MODIFIER:	Faulted			

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Cretaceous			Kliyul Creek Body

LITHOLOGY: Augite Porphyry Flow
Andesitic Flow
Calcareous Andesitic Tuff
Augite Porphyry Dike
Diorite
Microdiorite
Quartz Monzonite
Leucocratic Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE:	VEIN	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1988
SAMPLE TYPE:	Chip		
COMMODITY	Gold	GRADE	68.9100 Grams per tonne
COMMENTS:	Highest gold content from a quartz-magnetite vein 0.3 metre wide.		
REFERENCE:	Property File - Athlone Resources Ltd., Prospectus, 1988.		

CAPSULE GEOLOGY

The South Soup occurrence is located approximately 14 kilometres east of Dortatelle Peak, on the southwest facing slope of the ridge separating Croydon and Kliyul creeks. The location is centered on the southern skarn zone on the Soup 13 claim (Property File - Athlone Resources Ltd., Prospectus, 1988).

Regionally, the area is underlain by a northwest trending assemblage of Middle Triassic to Lower Jurassic Takla Group volcanics and sediments. These make up part of the Quesnel Terrane. The Takla Group rocks are intruded, to the south, by the Early Jurassic Hogem batholith. To the east, the rocks are intruded by leucocratic granodiorite of the Early Cretaceous Kliyul Creek body. Two,

CAPSULE GEOLOGY

northwest trending, elongate, Alaskan-type ultramafic bodies also occur in the general area. Smaller faults trend northwest but the major structure in the area is the north-trending Dortatelle fault.

Locally, the oldest exposed rocks are interfingering andesitic flows intruded by augite porphyry dykes. These flows grade into a succession of augite porphyry flows with minor intercalations of calcareous andesitic tuffs. This stratigraphic succession has been intruded by diorite stocks, dykes and sills, micro-diorites and quartz monzonite of the Early Cretaceous Kliyul Creek body (Assessment Report 21521).

Massive, northwest trending, stratiform lenses (or beds) of skarn occur near the base of the augite porphyry. The skarn is magnetite-rich with appreciable concentrations of gold and copper. At least 3 skarn horizons are recognized and possibly represent the replacement of calcareous tuffs (Assessment Report 16655). The skarn occurs as a series of parallel lenses, 1 to 5-metres thick, which are intermittently exposed for distances up to several hundred metres along strike.

Massive magnetite is concentrated, 60 to 100 per cent, near the top of the horizons. Peripheral zones, 5 to 20 metres thick, of disseminated magnetite, pyrite and chalcopyrite underlie most massive horizons. Lenses of massive pyrite occur within or adjacent to these zones. Outcrops of skarn are characteristically highly oxidized and contain epidote, actinolite and fine-grained garnet. Malachite, azurite and hematite are common oxidation features.

Cross-cutting faults, which offset the skarn horizons, contain similar mineralization within quartz-magnetite veins. Samples from these veins assayed up to 68.91 grams per tonne gold (Property File - Athlone Resources Ltd., Prospectus, 1988).

Skarn mineralization, at the plotted location, occurs at the contact between a feldspar-rich andesite and a porphyritic (augite) andesite near the Kliyul Creek body.

In 1996, drilling (9 holes) by Vital Pacific Resources Ltd. and Athlone Resources Ltd. targeted northwesterly-trending magnetite-rich auriferous zone containing at least three stratiform lenses. In 1997, three holes were drilled, the best returning 0.3 per cent copper and 1.5 grams per tonne gold over 8 metres (GCNL #151(Aug.7), 1997).

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- EMPR ASS RPT 675, 5498, 5985, 6410, 7033, 9485, 10742, 13315, 15201, *16655, *21521
EMPR EXPL 1975-E116; 1977-E214; 1978-E242; 1996-C11; 1997-28
EMPR GEM 1971-61
EMPR INF CIRC 1995-9, p. 25; 1996-1, p. 25; 1997-1, p. 30
EMPR P 1989-3, p.111
EMPR PF (In 094D 025 - *Athlone Resources Ltd., Prospectus, 1988)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29
GCNL Aug.14, 1989; Oct.12, 1994; Aug.28, 1996; #117(June 18), #151 (Aug.7), 1997
V STOCKWATCH July 13, 1989; Aug.29, 1990; Feb.1, 1991; July 9,15, 1993; May 2, Aug.24, Oct.11, 1994; May 16, June 27, Aug.2, Oct.17, 1995; Jan.23, Mar.11,22, May 6,9, July 16,18, Aug.27,29, 1996

DATE CODED: 1985/07/24
DATE REVISED: 1997/03/26

CODED BY: GSB
REVISED BY: GP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 106**

NATIONAL MINERAL INVENTORY:

NAME(S): **MONA JEAN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 16 23 N
LONGITUDE: 126 18 03 W
ELEVATION: 1545 Metres

NORTHING: 6239746
EASTING: 667129

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 4 kilometres northeast of Mount Carruthers
(Assessment Report 5563).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcocite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Jurassic

GROUP

Hazelton

FORMATION

Telkwa

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Siliceous Andesite
Porphyritic Andesite
Aphanitic Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1975

SAMPLE TYPE: Chip

COMMODITY

GRADE

Copper

2.4800

Per cent

COMMENTS: A 2.4-metre chip sample of highly silicified andesite.

REFERENCE: Assessment Report 5563.

CAPSULE GEOLOGY

The Mona Jean occurrence is located approximately 4 kilometres northeast of Mount Carruthers.

The area is underlain by Lower Jurassic Telkwa Formation (Hazelton Group) rocks. In this area, the Telkwa Formation overlies the Upper Triassic Dewar Formation (Takla Group) and the Permian Asitka Group. These rocks form a conformable northeast dipping succession. The Permian to Jurassic Sitlika assemblage, consisting of metamorphosed equivalents of the Asitka, Takla and Hazelton Groups (and possibly parts of the Bowser Lake Group), lies to the south. The Telkwa Formation is bounded to the northeast by the Pinchi fault. Localized faults in the area trend northeast and parallel major faults.

Locally, the area is underlain by Telkwa Formation porphyritic to aphanitic andesites with minor sedimentary rocks. Chalcocite occurs disseminated throughout a zone of highly silicified andesite. A 2.4-metre chip sample assayed 2.48 per cent copper (Assessment Report 5563).

BIBLIOGRAPHY

EMPR GEM 1975-E160
EMPR ASS RPT *5563
GSC OF 342
GSC MEM 251
GSC P 76-29

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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BIBLIOGRAPHY

GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/11

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 107**

NATIONAL MINERAL INVENTORY:

NAME(S): **BANDY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 20 42 N
LONGITUDE: 126 27 51 W
ELEVATION: 1810 Metres

NORTHING: 6247366
EASTING: 656723

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a ridge approximately due south of the confluence of the Asitka River and Quenada Creek (Assessment Report 5995).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcocite Bornite Chalcopyrite
ASSOCIATED: Quartz Calcite Epidote Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: E04 Sediment-hosted Cu D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Dewar	

LITHOLOGY: Siltstone
Volcaniclastic
Pebble Sandstone
Polymictic Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Bandy occurrence is located on a ridge approximately 5 kilometres due south of the confluence of Quenada Creek and the Asitka River.

Regionally, the area is near the contact between Lower Jurassic Telkwa Formation (Hazelton Group) volcanics and Upper Triassic Dewar Formation (Takla Group) sediments and volcaniclastics. The contact between these formations changes from a fault contact to an unconformable contact. The contact trends northwest which is parallel to the major faults. Smaller, more localized faults trend north-northeast.

At the Bandy occurrence, the Telkwa Formation rocks are maroon polymictic conglomerates. Siltstones of the Dewar Formation unconformably overlie the conglomerate. The maroon to light-green siltstones are fine-grained, grading to coarse pebbly sandstones. Mineralized beds and lenses of massive or laminated hard grey to black siltstone are interbedded with the volcaniclastics. Massive veins and lenses, predominantly epidote, commonly cut these rocks (Assessment Report 5995).

Disseminated and/or laminated chalcocite and bornite are found within the grey to black siltstone lenses. These lenses are a few centimetres to 1.5 metres in width and up to 140 metres long (Assessment Report 5995). The epidote veins commonly contain variable amounts of quartz, calcite, pyrite, bornite, chalcocite, and chalcopyrite. These veins are a few millimetres to 0.1 metre wide and can be traced for up to 30 metres (Assessment Report 5995).

BIBLIOGRAPHY

EMPR ASS RPT *5995
EMPR GEM 1976-E173
GSC OF 342
GSC MEM 251
GSC P 74-1 Part A; 76-29

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/02

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 108**

NATIONAL MINERAL INVENTORY:

NAME(S): **LAKE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 16 01 N
LONGITUDE: 126 20 47 W
ELEVATION: 1910 Metres

NORTHING: 6238956
EASTING: 664335

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 1.75 kilometres north of Mount Carruthers
(Assessment Report 18175).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcocite Bornite Copper
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Sedimentary
TYPE: E04 Sediment-hosted Cu

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE: Upper Triassic

GROUP: Takla

FORMATION: Dewar

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Shale

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY: Copper

GRADE	Per cent
2.8300	

COMMENTS: Sample from one of the western showings.
REFERENCE: Assessment Report 18175.

CAPSULE GEOLOGY

The Lake occurrence is located approximately 1.75 kilometres north of Mount Carruthers.

The regional geology is similar to that of the Carruthers Creek occurrence (refer to 094D 060).

The occurrence is hosted in sediments of the Upper Triassic Dewar Formation, Takla Group. Chalcocite and bornite, with minor amounts of native copper and malachite, are disseminated within a grey to black shale unit.

Two other copper showings are located approximately 500 metres to the west of the plotted location. A sample from one of the western showings assayed 2.83 per cent copper (Assessment Report 18175).

BIBLIOGRAPHY

EMPR GEM 1976-E173
EMPR ASS RPT *5927, *18175
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/11

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 109**

NATIONAL MINERAL INVENTORY:

NAME(S): **NIK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 39 58 N
LONGITUDE: 126 08 45 W
ELEVATION: 1895 Metres

NORTHING: 6283861
EASTING: 674906

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the 1976 diamond drill hole ND 4 (Assessment Report 6452).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite
ALTERATION: Feldspar Sericite Epidote Silica
ALTERATION TYPE: Sericitic Epidote Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Upper Triassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Peridotite
Gabbroic Dike
Andesitic Pyroclastic
Andesitic Flow
Fine Grained Tuff
Tuffaceous Arenite
Ultramafic

HOSTROCK COMMENTS: The ultramafic intrusive is informally named the Wrede Creek ultramafic complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Quesnel

METAMORPHIC TYPE: Contact

RELATIONSHIP:

GRADE: Hornfels

CAPSULE GEOLOGY

The Nik occurrence, located at the 1976 ND-4 diamond drill hole, is approximately 10 kilometres north of the south end of Johanson Lake (Assessment Report 6452).

The occurrence is near the southern border of an Alaskan-type ultramafic intrusion. This ultramafic is bounded to the southwest by the southwest trending Lay Range fault and to the northeast by a cross fault between the Lay Range fault and the Swannell fault. Across the Swannell fault to the east, lies the para-autochthonous Cassiar Terrane represented by Upper Proterozoic rocks assigned to the Ingenika Group. The ultramafic body intrudes Middle Triassic to Lower Jurassic Takla Group volcanics.

Locally, the area is underlain by Takla Group volcanic rocks which have been intruded by an ultramafic body composed of dunite, peridotite, pyroxenite and hornblendite. A quartz diorite intrusive cuts through the ultramafic body. The south and southeast border of this zoned ultramafic complex, informally named the Wrede Creek ultramafic complex, is in direct contact with hornfelsed volcanics (Assessment Report 15194). The Takla rocks strike east-west and dip moderately to the south. These volcanics consist of massive andesitic, augite-rich, coarse pyroclastics and flows, passing up into fine-grained tuffs and tuffaceous arenites intercalated with argillite and limestone units (Assessment Report 15194). Near the intrusion, these rocks have been hornfelsed to amphibolites.

Mineralization consists of chalcopyrite, pyrrhotite and pyrite in fractures and chalcopyrite and pyrite disseminated in altered zones of peridotite and gabbroic dykes. The altered zones, which contain mineralization, are feldspathic, sericitic, epidotized and silicic (Assessment Report 6015).

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BIBLIOGRAPHY

EMPR ASS RPT *6015, *6452, 7249, 7451, *9510, *15194
EMPR EXPL 1976-E174; 1977-E215; 1978-E243
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/29

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 110**

NATIONAL MINERAL INVENTORY:

NAME(S): **PGM**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D01E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 02 17 N
LONGITUDE: 126 04 56 W
ELEVATION: 1915 Metres

NORTHING: 6214155
EASTING: 681767

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 12 kilometres southeast of Axelgold Peak
(Assessment Report 15514).

COMMODITIES: Titanium Copper

MINERALS

SIGNIFICANT: Ilmenite Chalcopyrite Pyrite Pyrrhotite

ASSOCIATED: Pyroxene

ALTERATION: Silica

ALTERATION TYPE: Silicific'n

MINERALIZATION AGE: Upper Cretaceous

ISOTOPIC AGE: 101 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Gabbro

DEPOSIT

CHARACTER: Podiform Stratiform Disseminated Layered

CLASSIFICATION: Magmatic Industrial Min.

TYPE: M04 Magmatic Fe-Ti±V oxide deposits M02 Tholeiitic intrusion-hosted Ni-Cu

COMMENTS: The age of mineralization is assumed to be contemporaneous with the age of the Axelgold Intrusion.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Pennsylvan.-Permian Cache Creek

Upper Cretaceous

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Axelgold Intrusion

ISOTOPIC AGE: 101 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Gabbro

LITHOLOGY: Gabbro
Anorthosite
Ilmenite Pyroxenite
Diabase

HOSTROCK COMMENTS: Age reported by Richards, 1976 (Geological Survey of Canada Open File 342).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Plutonic Rocks

METAMORPHIC TYPE: Contact

RELATIONSHIP: Syn-mineralization

GRADE: Hornfels

CAPSULE GEOLOGY

The PGM occurrence is located approximately 12 kilometres southeast of Axelgold Peak.

The occurrence is hosted within the Late Cretaceous Axelgold Intrusion. The intrusion is predominantly layered gabbro with minor plugs of gabbro and diabase (Geological Survey of Canada Open File 342). A 101 Ma potassium-argon age date has been determined for this intrusion (Geological Survey of Canada Open File 342). It is bounded to the west by the northwest trending Pinchi fault and intrudes Pennsylvanian to Permian Cache Creek Group metasediments and greenstones. The Vital and Takla thrust faults occur to the west. The local geology is similar to that of the Axelgold occurrence (094D 035).

Ilmenite occurs as disseminations in anorthosite gabbros, up to 30 per cent concentrations, with minor chalcopyrite and pyrite (Assessment Report 15514). Ilmenite-pyroxenite layers, pods and lenses contain ilmenite concentrations between 3 and 50 per cent with associated pyrrhotite and pyrite (Assessment Report 15514).

BIBLIOGRAPHY

EMPR ASS RPT *15514, 15882
EMPR EXPL 1987-C322,C323
GSC P 76-29

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
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PAGE: 470
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MEM 251
GSC OF 342; 2232
GSC MAP 962A

DATE CODED: 1991/09/05
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 111**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHRED**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 42 51 N
LONGITUDE: 126 15 45 W
ELEVATION: 1510 Metres

NORTHING: 6288916
EASTING: 667545

LOCATION ACCURACY: Within 500M

COMMENTS: Diamond drill hole SDH 79-1 (Assessment Report 8213).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Chlorite
ALTERATION TYPE: Oxidation Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M05 Alaskan-type Pt±Os±Rh±Ir

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Unknown

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Ultramafic
Peridotite
Peridotite Dike
Diorite
Feldspar Hornblende Crystal Tuff
Volcaniclastic
Feldspar Porphyry Dike
Tuff
Agglomerate
Rhyodacite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Shred occurrence is centered on the 1979 diamond drill hole SDH 79-1, located just west of Wrede Creek, approximately 5 kilometres south of Fleet Peak (Assessment Report 8213).

Regionally, the occurrence lies within the Quesnel Terrane. Quesnellia rocks comprise a volcanic and sedimentary assemblage assigned to the Middle Triassic to Lower Jurassic Takla Group, and a poorly defined sedimentary and volcanic suite belonging to the Pennsylvanian to Permian Lay Range assemblage which is believed to be part of the Harper Ranch subterrane (Geological Survey of Canada, Geology of Canada Number 4, in press). These rocks are intruded by Early Jurassic monzodiorites, Early Cretaceous quartz monzodiorites and Late Triassic Alaskan-type ultramafics.

This package of sediments, volcanics and intrusions is bounded to the east by the north-northwest trending Swannell fault and to the west by the north-northwest trending Ingenika fault. The Swannell fault separates the Quesnel Terrane from the para-autochthonous Cassiar Terrane represented by Upper Proterozoic rocks assigned to the Ingenika Group. The Ingenika fault separates the Quesnel Terrane from the Stikine Terrane, an aggregate of allochthonous Paleozoic and Mesozoic magmatic arc assemblages and overlying sedimentary sequences (Monger, 1984).

Locally, the Middle Triassic to Lower Jurassic Takla Group is represented by a volcaniclastic unit, a feldspar hornblende crystal tuff and a feldspar porphyry dyke. The volcaniclastic unit consists of sandy limestone, fine-grained andesitic tuff, crystal tuff and agglomerate. The limestone bed strikes 140 degrees and dips 76 degrees to the east (Assessment Report 8213). The dyke is a grey

CAPSULE GEOLOGY

rhyodacite and the contact with the crystal tuff unit is sheared and brecciated. The breccia fragments are deformed, chlorite altered and rimmed with pyrite (Assessment Report 8213). Ultramafic peridotite dykes also intrude the tuffs.

Surface mineralization occurs as massive pyrite and chalcopyrite lenses within an ultramafic outcrop. Diamond drill holes SDH 79-1 through to 79-4 are in close proximity to this surface mineralization. The drill holes vary between 3 and 39 metres in depth and only drill hole SDH 79-1 contained mineralization.

The mineralization consisted of malachite, pyrite and chalcopyrite and in a sheared peridotite (Assessment Report 8213).

Approximately 250 metres to the east of the cluster of drill holes, chalcopyrite is found in minor amounts as disseminated blebs in widely-spaced quartz veins (Assessment Report 6369). These veins occur in an area of small localized faults which trend northwest and cut dioritic, ultramafic and schistose rocks.

BIBLIOGRAPHY

- EMPR EXPL 1977-E215; 1978-E243; 1979-264
EMPR ASS RPT *6369, 6843, *8213, 12800, 13316
GSC (Geology of Canada Number 4, in press)
GSC MAP 962A
GSC MEM 251, p. 62
GSC OF 342
GSC P 76-29
Monger, J. W. H., 1984, Cordilleran Tectonics: A Canadian Perspective, Geol. Soc. France Bull., ser. 7, v. 26, no. 2, p. 255-278

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/14

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 112**

NATIONAL MINERAL INVENTORY:

NAME(S): **NORMAN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D01W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 10 51 N
LONGITUDE: 126 22 46 W
ELEVATION: 1080 Metres

NORTHING: 6229297
EASTING: 662653

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 8 kilometres south-southwest of Mount Carruthers
(Property File - Canadian Superior Exploration Ltd., Maps from
Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Norman occurrence is located approximately 8 kilometres south-southwest of Mount Carruthers.

The occurrence is hosted in andesites, possibly of the Lower Jurassic Telkwa Formation (Hazelton Group). The area is complex due to the amount of faulting and numerous thrust faults occur to the east. Most of the major faults trend northwest and smaller crosscutting faults trend north to northeast.

Mineralization consists of chalcopyrite within the andesites. Two other chalcopyrite showings are hosted in the andesites with one approximately 1 kilometre to the east and the other 1 kilometre to west.

BIBLIOGRAPHY

EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/09/09
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 113**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAVIE CREEK MOLY**, KLIYUL, BEAR

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094D08E 094C05W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 27 26 N
LONGITUDE: 126 00 44 W
ELEVATION: 1625 Metres

NORTHING: 6260971
EASTING: 684103

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the 1982 drilling area located on the east facing slope of the ridge east of Kliyul Creek (Assessment Report 10730).

COMMODITIES: Molybdenum Copper Tungsten

MINERALS

SIGNIFICANT:	Molybdenite	Chalcopyrite	Scheelite	Pyrite
ALTERATION:	K-Feldspar	Sericite	Chlorite	
ALTERATION TYPE:	Potassic	Sericitic	Chloritic	
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Igneous-contact
TYPE: L05 Porphyry Mo (Low F- type)
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Cretaceous			Kliyul Creek Body

LITHOLOGY: Porphyritic Granodiorite
Hornblendite
Quartz Monzonite
Diorite
Hornfels
Andesite
Leucocratic Granodiorite

HOSTROCK COMMENTS: The intrusive has informally been named the Davie Creek stock.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact

Quesnel
RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Hornfels

INVENTORY

ORE ZONE: DRILLHOLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1982
SAMPLE TYPE: Drill Core	
<u>COMMODITY</u>	<u>GRADE</u>
Molybdenum	0.0250 Per cent
COMMENTS: A 113-metre drill interval.	
REFERENCE: Assessment Report 10730.	

ORE ZONE: PORPHYRY	REPORT ON: Y
CATEGORY: Unclassified	YEAR: 1991
QUANTITY: 10000000 Tonnes	
<u>COMMODITY</u>	<u>GRADE</u>
Molybdenum	0.1000 Per cent
COMMENTS: Tabular, potassically altered zone.	
REFERENCE: Assessment Report 21521.	

CAPSULE GEOLOGY

The Davie Creek property is located on the east facing slope of the ridge east of Kliyul Creek in the centre of the 1982 drilling program area (Assessment Report 10730).

Regionally, the area is underlain by a northwest trending assemblage of Middle Triassic to Lower Jurassic Takla Group volcanics and sediments. The Takla Group rocks are intruded to the south by the Early Jurassic Hogem batholith. To the east, these rocks have

CAPSULE GEOLOGY

been intruded by leucocratic granodiorite of the Early Cretaceous Kliyul Creek body. Two northwest trending elongate Alaskan-type ultramafic bodies also occur in the general area.

The major structure in this area is the north trending Dortatelle fault. Smaller faults trend northwest.

The occurrence is hosted in porphyritic granodiorites, hornblendites, quartz monzonites and contact metamorphosed diorites and andesites of the Takla Group. The intrusion has been informally named the Davie Creek stock and is an elongate, northwest trending, body approximately 1 kilometre in length (Assessment Report 21521). These rocks have undergone pervasive potassic alteration with associated chloritic and sericitic alteration.

Disseminated chalcopyrite, scheelite, molybdenite and pyrite occur within the stock and hornfelsed rocks. A 113-metre drill interval assayed an average of 0.025 per cent molybdenum (Assessment Report 10730). Molybdenite mineralization is associated with the Davie Creek stock (Assessment Report 21521). Reserves of 100 million tonnes of 0.1 per cent molybdenum have been outlined within a tabular, potassically altered zone of the intrusion (Assessment Report 21521).

BIBLIOGRAPHY

EMPR ASS RPT *7743, *10009, *10730, *21521, 24778
EMPR EXPL 1981-179; 1979-263
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/17

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 114**

NATIONAL MINERAL INVENTORY: 094D8 Gem1

NAME(S): **MCCONNELL BERYL**, DORTATELLE CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 25 14 N
LONGITUDE: 126 06 32 W
ELEVATION: 1660 Metres

NORTHING: 6256637
EASTING: 678320

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 9 kilometres east of Dortatelle Peak (Property File - Canadian Superior Exploration Ltd., Maps from Company Files, c. 1973).

COMMODITIES: Beryllium

MINERALS

SIGNIFICANT: Beryl Pyrite
ASSOCIATED: Garnet Mica Quartz Feldspar
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Concordant
CLASSIFICATION: Magmatic Industrial Min.
TYPE: O01 Rare element pegmatite - LCT family

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Pegmatitic Dike
Gneiss
Granite
Schist
Meta Volcanic
Volcanic

HOSTROCK COMMENTS: The host is the Hogem batholith, recently re-defined as part of the Hogem Intrusive Complex by mapping to the south (Open File 1992-11).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact

Plutonic Rocks
RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE:

CAPSULE GEOLOGY

The McConnell Beryl occurrence is located approximately 9 kilometres east of Dortatelle Peak (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The occurrence is hosted in pegmatitic dykes cutting Middle Triassic to Lower Jurassic Takla Group volcanics metamorphosed by the Early Jurassic Hogem batholith (the batholith has recently been re-defined as part of the Hogem Intrusive Complex by mapping to the south, Open File 1992-11). To the west lies the north trending Dortatelle fault. Smaller faults in the area trend northwest.

Large megacrysts (up to 2 centimetres) of pale green beryl occur within pegmatitic dykes scattered throughout the granitic masses and surrounding volcanic rocks. The pegmatites contain pink and white feldspars, quartz, mica and minor amounts of red-brown garnet, beryl and pyrite (Geological Survey of Canada Memoir 251). The dykes are more common near the contact between the granitic body and the surrounding schistose and gneissic volcanic rocks.

BIBLIOGRAPHY

EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
EMPR OF 1992-11
EMPR BULL 70
GSC EC GEOL No. 23, p. 57
GSC MEM *251, pp. 32,64
GSC OF 342
GSC P 76-29
GSC MAP 962A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 477
REPORT: RGEN0100

BIBLIOGRAPHY

Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/27

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 115**

NATIONAL MINERAL INVENTORY:

NAME(S): **BRECCIA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 34 46 N
LONGITUDE: 126 03 24 W
ELEVATION: 1600 Metres

NORTHING: 6274450
EASTING: 680782

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 6 kilometres east of the southern tip of Johanson Lake, between 2 diamond drill holes (Assessment Report 10686).

COMMODITIES: Copper Molybdenum Silver

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Bornite Pyrite Pyrrhotite
ASSOCIATED: Quartz Epidote Chlorite Magnetite Hematite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Shear Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Tabular
MODIFIER: Fractured Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Unknown

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Andesitic Volcanic
Porphyritic Andesite
Granodiorite
Breccia
Andesite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1982

COMMODITY

Silver
Copper

GRADE

4.8000 Grams per tonne
0.5300 Per cent

COMMENTS: A 3.048-metre drill intersection.
REFERENCE: Assessment Report 10686.

CAPSULE GEOLOGY

The Breccia occurrence is located approximately 6 kilometres due east of the southern tip of Johanson Lake, centered between two 1982 diamond drill holes (Assessment Report 10686, Part 1). Regionally, the area is underlain by the Middle Triassic to Lower Jurassic Takla Group volcanics. The volcanics are bound to the north by the northwest trending Lay Range fault and to the west by the north trending Dortatelle fault. This succession of volcanics has been intruded to the south by the Early Jurassic Hogem batholith. Approximately 4 kilometres to the east of this occurrence, the volcanics have been intruded by the Early Jurassic Johanson Lake stock. The volcanic rocks in the area include andesitic volcanics, porphyritic (mainly pyroxene with lesser hornblende and feldspar) andesites and andesitic dykes. Granodiorites and multi-lithic breccias also occur locally.

All rock types contain mineralization in the form of disseminations and vein material. Bornite and chalcopyrite occur with associated pyrite in quartz-epidote veins and as disseminations within the breccia. Molybdenite, along with associated magnetite and pyrrhotite, occurs in quartz veins, fractures and shears. Chlorite

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RUN TIME: 11:51:27

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CAPSULE GEOLOGY

and hematite also occur in some of the mineralized veins.
A mineralized andesite from a 3.048-metre drill intersection
assayed 0.53 per cent copper and 4.8 grams per tonne silver
(Assessment Report 10686, Part 1).

BIBLIOGRAPHY

EMPR ASS RPT *10686, *11842
EMPR EXPL 1982-327; 1983-470
EMPR FIELDWORK 1982-124
GSC OF 342
GSC P 76-29
GSC MEM 251
GSC MAP 962A

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/02

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 116**

NATIONAL MINERAL INVENTORY:

NAME(S): **PETEKA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D02W 094D03E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 11 42 N
LONGITUDE: 127 00 00 W
ELEVATION: 1670 Metres

NORTHING: 6229583
EASTING: 624097

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization approximately 2 kilometres west of Mount Patcha (Assessment Report 14680).

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite

ASSOCIATED: Pyrite

ALTERATION: Hematite Epidote Chlorite Calcite Malachite

Azurite

ALTERATION TYPE: Oxidation Epidote Carbonate Chloritic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Shear

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: L04 Porphyry Cu ± Mo ± Au D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Hornblende Plagioclase Andesite
Aphanitic Basalt
Basalt
Meta Sediment/Sedimentary
Diabase Dike

HOSTROCK COMMENTS: The dykes are probably related to the Eocene Kastberg Intrusions (Geological Survey of Canada Open File 342).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 80.9000 Grams per tonne
Copper 3.6000 Per cent

COMMENTS: The upper range from four samples collected from fractures and narrow shear zones.

REFERENCE: Assessment Report 14680.

CAPSULE GEOLOGY

The Peteka occurrence is located approximately 2 kilometres east of Mount Patcha.

The showing is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) rocks. The most dominant rock type is andesite which is typically red-purple (maroon) in colour and is locally vesicular. Where porphyritic, the andesites contain hornblende and plagioclase phenocrysts. Other rocks in the area include aphanitic basalts and meta-sediments.

Diabase dykes, comprised of approximately 70 per cent plagioclase and 25 to 30 per cent mafics, intrude the rocks. These dykes are probably related to the Eocene Kastberg Intrusions (Geological Survey of Canada Open File 342).

The most observable alteration is hematite which gives a mottled red-green appearance to the volcanics. Epidote alteration is

CAPSULE GEOLOGY

observed locally in association with the fractures. Chlorite alteration is minor except in the basaltic unit. Carbonate alteration is minor and found throughout the area in narrow calcite stringers.

Mineralization consists of chalcopyrite with minor malachite and azurite. The chalcopyrite occurs disseminated or in small blebs in narrow fractures and shear zones.

Four rock grab samples from fractures or narrow shear zones assayed 0.80 to 3.60 per cent copper and 33.6 to 80.9 grams per tonne silver (Assessment Report 14680).

BIBLIOGRAPHY

EMPR ASS RPT *14680
EMPR EXPL 1986-C381
EMPR OF 2001-18
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1991/08/19
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 117**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOPO**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 13 44 N
LONGITUDE: 127 05 14 W
ELEVATION: 1650 Metres

NORTHING: 6233200
EASTING: 618581

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 4 kilometres northwest of Mount Patcha (Property File - Canadian Superior Exploration Ltd., Maps from Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated Stratiform
CLASSIFICATION: Sedimentary Syngenetic
TYPE: E04 Sediment-hosted Cu

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Cherty Limestone
Pyroclastic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Topo occurrence is located approximately 4 kilometres northwest of Mount Patcha. The regional geology is similar to the Spring occurrence (refer to 094D 104) which is approximately 6 kilometres along a topographic lineament to the west-northwest. Mineralization consists of chalcopyrite hosted in cherty limestones of the Lower Jurassic Telkwa Formation (Hazelton Group). This limestone unit is found within red to light grey pyroclastics.

BIBLIOGRAPHY

EMPR OF 2001-18
EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1991/08/19
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 118**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLD #8**, HORN

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 07 31 N
LONGITUDE: 127 08 14 W
ELEVATION: 1290 Metres

NORTHING: 6221586
EASTING: 615794

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of known mineralization within the Gold #8 claim (Assessment Report 14073).

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Sericite Pyrite
ALTERATION TYPE: Sericitic Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Regular
DIMENSION: STRIKE/DIP: 308/38 TREND/PLUNGE:
COMMENTS: Average strike and dip of one set of mineralized veins (Assessment Report 14073).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Greywacke
Conglomerate
Shale
Dacite Porphyry Dike

HOSTROCK COMMENTS: A Late Oxfordian ammonite suggests a host rock from the highest beds of the Ashman Formation or the lowest beds of the undivided sequence.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake

INVENTORY

ORE ZONE: VEIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 368.3000 Grams per tonne
Gold 16.7300 Grams per tonne
Lead 0.5300 Per cent
Zinc 0.2900 Per cent
COMMENTS: One of the best samples, from a 5-centimetre quartz vein.
REFERENCE: Assessment Report 14073.

CAPSULE GEOLOGY

The Gold #8 occurrence is located approximately 5 kilometres north-northeast of Motase Peak and lies within the Gold #8 claim. The host rocks are interbedded shales and greywackes with minor intercalated conglomerate beds of the Middle to Upper Jurassic Bowser Lake Group. A Late Oxfordian age was obtained from an ammonite impression suggesting that the sediments are from the highest beds of the Ashman Formation or the lowest beds of the undivided volcanics and sediments (Assessment Report 14073). The sedimentary rocks are intruded by altered dacite porphyry dykes composed of 40 per cent phenocrysts (2 to 5 millimetres in size) in a quartz-sericite-feldspar matrix with 2 to 3 per cent pyrite. The mineralization occurs within two sets of quartz veins.

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CAPSULE GEOLOGY

The attitudes are 295 to 320 degrees, dipping 30 to 46 degrees north and 065 to 080 degrees, dipping 40 to 70 degrees northwest. These veins, typically 5 to 30 centimetres wide, contain quartz, galena, sphalerite, pyrite and carbonate. The smaller veins contain minor chalcopyrite.

One of the best samples from a 5-centimetre vein assayed 0.53 per cent lead, 0.29 per cent zinc, 368.3 grams per tonne silver and 16.73 grams per tonne gold (Assessment Report 14073).

BIBLIOGRAPHY

EMPR ASS RPT 9522, *14073
EMPR EXPL 1985-C344
EMPR OF 2001-18
GSC OF 342
GSC P 76-29

DATE CODED: 1991/08/20
DATE REVISED: 1991/08/28

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 119**

NATIONAL MINERAL INVENTORY:

NAME(S): **JAKE SOUTH**

MINING DIVISION: Omineca

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094D03W
 BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 09 53 N
 LONGITUDE: 127 21 46 W
 ELEVATION: 1720 Metres

NORTHING: 6225620
 EASTING: 601670

LOCATION ACCURACY: Within 500M

COMMENTS: Located approximately 15 kilometres northwest of Motase Peak (Assessment Report 16838).

COMMODITIES: Copper Gold Silver Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite Pyrrhotite

 Arsenopyrite

ASSOCIATED: Greenockite Quartz

ALTERATION: Ankerite Calcite Malachite

ALTERATION TYPE: Carbonate Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Undefined Formation	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Hornfelsed Sediment/Sedimentary
 Mudstone
 Siltstone
 Sandstone
 Wacke
 Conglomerate
 Biotite Plagioclase Porphyry
 Biotite Hornblende Plagioclase Porphyry

HOSTROCK COMMENTS: The intrusions may be related and contemporaneous with either the Cretaceous Bulkley or Eocene Kastberg intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Bowser Lake

METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Skeena Ranges

RELATIONSHIP:

GRADE: Hornfels

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1987
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Silver		25.2000	Grams per tonne
Gold		3.7000	Grams per tonne
Lead		1.2400	Per cent
Zinc		2.5000	Per cent

COMMENTS: One of the best samples from the late hypogene mineralization.
 REFERENCE: Assessment Report 16838.

CAPSULE GEOLOGY

The Jake south occurrence is located approximately 15 kilometres northwest of Motase Peak.

The occurrence has regional and local geology similar to that of the Jake North occurrence (refer to 094D 061).

The local geology consists of interbedded mudstones, siltstones, sandstones, wackes and minor conglomerates of the Middle to Upper Jurassic Bowser Lake Group. These sediments are intruded by stocks of biotite-plagioclase porphyry and biotite-hornblende-plagioclase porphyry. The intrusions are possibly related to and contemporaneous with either the Eocene Kastberg Intrusions or the Cretaceous Bulkley

CAPSULE GEOLOGY

Intrusions (Assessment Report 16838).

Mineralization is divisible into two stages; a late hypogene stage and an early hypogene stage.

The early hypogene stage is characterized by white quartz veins in hornfelsed sediments. The veins are typically up to 0.01-metre wide and contain abundant pyrite with minor pyrrhotite and chalcopryrite. One sample assayed 0.128 per cent copper and 1.3 grams per tonne silver (Assessment Report 16838).

The late hypogene stage is characterized by grey quartz veins in hornfelsed sediments. The veins, typically 0.1-metre thick, may be vuggy or contain seams of sulphides. The veins are composed of wall rock fragments, arsenopyrite, pyrite, sphalerite, minor galena, chalcopryrite, greenockite and malachite. The veins occur in a zone of sheared and carbonate-altered rock. Late ankerite and calcite locally fill the vugs. One of the best samples assayed 3.7 grams per tonne gold, 1.24 per cent lead, 2.5 per cent zinc and 25.2 grams per tonne silver (Assessment Report 16838).

BIBLIOGRAPHY

EMPR ASS RPT *16838, *20607
EMPR OF 2001-18
GSC MAP 962A
GSC MEM 251
GSC OF 342; 2322
GSC P 76-29
CJES VOL 14 p. 2414-2421
Placer Dome File

DATE CODED: 1991/08/15
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 120**

NATIONAL MINERAL INVENTORY: 094D3 Cu2,Cu8

NAME(S): **COPPER**, WEST SECTION, OUT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 14 43 N
LONGITUDE: 127 05 01 W
ELEVATION: 1800 Metres

NORTHING: 6235030
EASTING: 618754

LOCATION ACCURACY: Within 500M

COMMENTS: Showings 1 and 2, located about 7 kilometres northwest of Mount Patcha
(Property File - Mouritsen, S.A., 1969).

COMMODITIES: Copper Silver Lead

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Galena Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Argillaceous Tuff
Volcanic Flow
Argillite
Andesitic Pyroclastic
Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1969
SAMPLE TYPE: Rock	
<u>COMMODITY</u>	<u>GRADE</u>
Silver	226.0000 Grams per tonne
Copper	1.2000 Per cent
COMMENTS: Sample representing 2.44 metres from showing 2.	
REFERENCE: Property File - Mouritsen, S.A., 1969.	

CAPSULE GEOLOGY

The Copper occurrence is located approximately 7 kilometres northwest of Mount Patcha, centered between showings 1 and 2. Showings 3 and 4 are located approximately 1 kilometre to the southeast.

The showings are hosted in the Lower Jurassic Telkwa Formation (Hazelton Group) argillaceous tuffs, volcanic flows, argillites, and andesitic pyroclastics. Diorite dykes, possibly related to and contemporaneous with the Eocene Kastberg Intrusions, intrude the rocks (Property File - Mouritsen, S. A., 1969).

Faulting in the area generally trends west to north-northwest and has resulted in fractures within the country rocks. A large west striking fault runs through the middle of the property and is informally named the "Main fault".

Mineralization at the showings consists of bornite and chalcopyrite with minor pyrite and galena. Mineralization occurs in heavily fractured and malachite stained Telkwa Formation rocks. The fractures and veins are associated with the "Main fault".

A sample representing 2.44 metres from showing 2 assayed 1.2 per cent copper and 226.1 grams per tonne silver (Property File - Mouritsen, S. A., 1969).

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RUN TIME: 11:51:27

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REPORT: RGEN0100

BIBLIOGRAPHY

EMPR GEM 1970-186
EMPR OF 2001-18
EMPR PF (In 094D 058 - *Mouritsen, S. A. (1969) Report on Bear Lake
Project, Copper Magnum Groups for Roosevelt Mines Limited)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1991/08/18
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 121**

NATIONAL MINERAL INVENTORY: 094D3 Cu7

NAME(S): **MP**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D03E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 56 04 52 N
LONGITUDE: 127 13 21 W
ELEVATION: 1070 Metres

NORTHING: 6216531
EASTING: 610620

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located north and south of the MP claim group, west of Motase Peak at 1066 metres elevation (Geology, Exploration and Mining in British Columbia, 1973, pages 405-406).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Bowser Lake	Unnamed/Unknown Formation	

LITHOLOGY: Meta Sediment/Sedimentary
Felsic Dike
Meta Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The MP occurrence is located west of Motase Peak at approximately the 1070 metre elevation (Geology, Exploration and Mining in British Columbia, 1973, pages 405-406).

Mineralization is hosted within the Middle to Upper Jurassic Bowser Lake Group metasediments and metavolcanics. Pyritic felsic dykes and sills intrude these rocks.

Mineralization consists of disseminated chalcopyrite in fault bounded metavolcanic rocks. Minor molybdenite is associated with the dykes and sills cutting the metasediments.

BIBLIOGRAPHY

EMPR GEM *1973-405,406
EMPR OF 2001-18
EMPR PF (In 094D General File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1991/08/21
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 122**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEISHMAN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D01W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 12 13 N
LONGITUDE: 126 16 24 W
ELEVATION: 1445 Metres

NORTHING: 6232087
EASTING: 669137

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of a cluster of mineralized showings, about 8 kilometres south-east of Mount Carruthers (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Unnamed/Unknown Formation	

LITHOLOGY: Tuff
Agglomerate
Basalt
Andesite
Breccia
Rhyolite

HOSTROCK COMMENTS: The host rocks may belong to the Carruthers Formation (Geological Survey of Canada Open File 342).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Leishman occurrence is located approximately 8 kilometres southeast of Mount Carruthers, centered on a cluster of mineralized showings (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The showing comprises numerous copper occurrences within a diameter of approximately 3 kilometres. The mineralization occurs within Lower to Middle Jurassic Hazelton Group rocks which form an east dipping succession. The sedimentary rocks are predominantly from the Nilkitkwa Formation which overlies the Carruthers Formation (basalt and andesite flows, breccia and pillow breccia) and the Telkwa Formation (basalts, andesites, dacite and rhyolite flows, breccias, tuffs and minor sediments). The succession is partially repeated by northwest trending thrust faults. This succession is bounded to the east by the Carruthers thrust fault.

The mineralization occurs disseminated in tuffs and agglomerates. The dominant sulphide is chalcopyrite with lesser bornite and chalcocite. Copper mineralization also occurs in quartz veins and within shear zones. Commonly associated with the mineralization is pyrite, malachite staining and minor hematite.

BIBLIOGRAPHY

EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC OF 342
GSC MEM 251
GSC P 76-29

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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PAGE: 491
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BIBLIOGRAPHY

GSC MAP 962A

DATE CODED: 1991/09/09
DATE REVISED: 1992/05/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 123**

NATIONAL MINERAL INVENTORY:

NAME(S): **FORKS, FALLS, OMINI**

MINING DIVISION: Omineca

STATUS: Prospect
 REGIONS: British Columbia
 NTS MAP: 094D01W
 BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 08 53 N
 LONGITUDE: 126 19 24 W
 ELEVATION: 1060 Metres

NORTHING: 6225784
 EASTING: 666276

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 7 kilometres north of Nanitsch Lake, on an unnamed creek that drains the lake (Assessment Report 19860).

COMMODITIES: Gold Copper Silver Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Galena Sphalerite

ASSOCIATED: Carbonate Prehnite

ALTERATION: Hematite Pyrite Silica Carbonate K-Feldspar

Chlorite

ALTERATION TYPE: Oxidation Pyrite Potassic Silicific'n Chloritic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Shear Disseminated

CLASSIFICATION: Hydrothermal Epigenetic Porphyry

TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au D03 Volcanic redbed Cu

SHAPE: Tabular

MODIFIER: Fractured Faulted

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Savage Mountain	

LITHOLOGY: Basaltic Flow
 Amygdaloidal Andesite
 Lapilli Tuff
 Breccia Flow
 Latite Tuff
 Andesite
 Basalt
 Monzonite
 Syenite
 Quartz Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
 TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1990

SAMPLE TYPE: Drill Core

COMMODITY

GRADE	
Silver	5.1000 Grams per tonne
Gold	5.4000 Grams per tonne
Copper	0.1100 Per cent
Lead	0.1500 Per cent
Zinc	0.1400 Per cent

COMMENTS: A 0.9-metre drill core interval.

REFERENCE: Assessment Report 19860.

ORE ZONE: SHOWING

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1990

SAMPLE TYPE: Drill Core

COMMODITY

GRADE	
Gold	3.8400 Grams per tonne
Copper	0.1100 Per cent

COMMENTS: A 1.5-metre drill core interval from the Falls showing.

REFERENCE: Assessment Report 19860.

CAPSULE GEOLOGY

The Forks occurrence is located approximately 7 kilometres north of Nanitsch Lake, on an unnamed creek that drains the lake. The Falls showing, included in this occurrence, is less than 1 kilometre upstream.

The unnamed creek follows a major north trending fault that separates the Lower to Middle Jurassic Hazelton Group (in this area, probably the Telkwa Formation) to the west, and the Upper Triassic Savage Mountain Formation (Takla Group) to the east. This fault terminates against a major northwest trending fault.

The area is underlain by andesites and basalts intruded by monzonitic to syenitic intrusions. These rocks are all intruded by quartz-feldspar porphyry dykes which are possibly related to the Eocene Kastberg Intrusions.

Mineralization occurs in two different styles. At the Forks showing, mineralization comprising mainly galena and sphalerite is associated with quartz carbonate fault breccia zones and silicified shear zones. Minor chalcopyrite and associated hematite is also present. These fault breccias cut through lapilli tuffs, basaltic flows and breccia flows. The host rocks are fractured and filled with carbonate and prehnite. A 0.9-metre drill interval from a silicified shear zone assayed 0.15 per cent lead, 0.14 per cent zinc, 5.1 grams per tonne silver, 0.11 per cent copper and 5.4 grams per tonne gold (Assessment Report 19860).

At the Falls showing, mineralization is dominated by copper and gold within the volcanics and associated alkaline intrusives. Chalcopyrite, bornite and chalcocite occur disseminated and in amygdules within the amygdaloidal phases of the andesites. Hematitic, pyritic, silicic, chloritic and potassic alteration is prevalent throughout this showing. A 1.5-metre drill intersection of fractured and amygdaloidal (pyrite with trace chalcopyrite) andesite and latite tuffs assayed 0.11 per cent copper and 3.84 grams per

BIBLIOGRAPHY

EMPR ASS RPT *19860
GSC OF 342
GSC P 76-29
GSC MEM 251
GSC MAP 962A
Placer Dome File

DATE CODED: 1991/09/10
DATE REVISED: 1991/09/10

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 124**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOM**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 16 34 N
LONGITUDE: 126 20 34 W
ELEVATION: 1820 Metres

NORTHING: 6239985
EASTING: 664519

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 3 kilometres north of Mount Carruthers (Property File-Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Dewar	

LITHOLOGY: Banded Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Tom occurrence is located approximately 3 kilometres north of Mount Carruthers.

The occurrence is hosted in Upper Triassic Dewar Formation (Takla Group) banded tuffs. The regional geological setting is similar to that of the Carruthers Creek occurrence (094D 060).

Chalcopyrite mineralization occurs in shears and malachite is commonly observed throughout the tuffs.

BIBLIOGRAPHY

EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/09/11
DATE REVISED: 1991/09/11

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 125**

NATIONAL MINERAL INVENTORY:

NAME(S): **KELLY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 23 16 N
LONGITUDE: 126 02 05 W
ELEVATION: 2025 Metres

NORTHING: 6253186
EASTING: 683050

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 15 kilometres southeast of Dortatelle Peak, 3 kilometres north of the Mesilinka River (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Molybdenum

MINERALS

SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Hogem Intrusive Complex
Lower Jurassic			

LITHOLOGY: Pegmatite
Granodiorite

HOSTROCK COMMENTS: The pegmatites cut Early Cretaceous (or later?) granodiorite intruding the Hogem batholith, recently re-defined as an intrusive complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Kelly occurrence is located approximately 15 kilometres southeast of Dortatelle Peak, 3 kilometres north of the Mesilinka River.

The occurrence is hosted in pegmatites cutting Early Cretaceous (or later?) granodiorites that intrude the Early Jurassic Hogem batholith. The batholith has recently been re-defined, from mapping to the south, to be part of the Mesozoic Hogem Intrusive Complex (Open File 1992-11). Mapping in this would probably indicate that the granodiorites are also part of the complex. The Middle Triassic to Lower Jurassic Takla Group volcanics lie just to the north of these intrusives.

Mineralization occurs as disseminated molybdenite within pegmatites (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

BIBLIOGRAPHY

EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
EMPR OF 1992-11
EMPR BULL 70
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/09/16
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **THORNE**, THOR, THOR-MARMOT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 49 46 N
LONGITUDE: 126 38 08 W
ELEVATION: 1900 Metres

NORTHING: 6300893
EASTING: 644275

LOCATION ACCURACY: Within 500M

COMMENTS: The sampled rusty shear zone, located 4.5 kilometres southeast of the southern tip of Thorne Lake (Assessment Report 13001).

COMMODITIES: Gold Copper Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Azurite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Mafic Volcanic
Intermediate Volcanic
Hornblende Porphyry
Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1984

SAMPLE TYPE: Grab

COMMODITY

Gold

GRADE

3.2000

Grams per tonne

COMMENTS: Sample from a rusty shear zone.

REFERENCE: Assessment Report 13001.

CAPSULE GEOLOGY

The Thorne occurrence is located approximately 4.5 kilometres east-southeast of the southern tip of Thorne Lake.

The occurrence is hosted in Upper Triassic Savage Mountain Formation (Takla Group) mafic to intermediate volcanics. In this area, the Savage Mountain Formation is bounded to the west by the northwest trending Moose Valley fault and to the east by an Early Jurassic quartz monzodiorite intrusive.

Mineralization consists of chalcopyrite and sphalerite with associated pyrite in rusty shear zones and quartz-carbonate veins. The shear zones and veins cut mafic to intermediate volcanics which have been locally intruded by hornblende and feldspar porphyries.

The volcanics are fractured and exhibit propylitic alteration. Malachite and azurite commonly stain the shears and veins.

Three grab samples, two from rusty shear zones and one from a rusty mafic volcanic, assayed 3.2, 0.675 and 0.705 grams per tonne respectively (Assessment Report 13001).

San Telmo Resources Ltd. worked the property in 1998.

BIBLIOGRAPHY

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EMPR ASS RPT *13001, 22957, 24181
EMPR EXPL 1984-347

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 497
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 73-31; 74-1 Part A; 76-29
GCNL #76 (Apr.21), 1998

DATE CODED: 1991/09/27
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 127**

NATIONAL MINERAL INVENTORY:

NAME(S): **THORNE LAKE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 51 06 N
LONGITUDE: 126 36 51 W
ELEVATION: 1655 Metres

NORTHING: 6303411
EASTING: 645494

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 5 kilometres due east of the centre of Thorne Lake (Assessment Report 13001).

COMMODITIES: Copper Lead Zinc Gold

MINERALS

SIGNIFICANT: Chalcopyrite Galena Sphalerite Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica Malachite Azurite
ALTERATION TYPE: Silicific'n Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Takla Savage Mountain

LITHOLOGY: Mafic Volcanic
Intermediate Volcanic
Hornblende Porphyry
Lamprophyre Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Grab
COMMODITY: Copper GRADE: 0.1790 Per cent
COMMENTS: Sample from sulphide zone.
REFERENCE: Assessment Report 13001.

CAPSULE GEOLOGY

The Thorne Lake occurrence is located approximately 5 kilometres due east of Thorne Lake.

The occurrence is hosted in Upper Triassic Savage Mountain Formation (Takla Group) mafic to intermediate volcanics. In this area, the Savage Mountain Formation is bounded to the west by the northwest trending Moose Valley fault and to the east by an Early Jurassic quartz monzodiorite intrusive.

Mineralization consists of chalcopyrite, galena and sphalerite with associated pyrite in a gossanous sulphide zone. Numerous small quartz veins and rusty fracture zones cut silicified mafic to intermediate volcanics near this zone. The volcanics are locally intruded by hornblende porphyry and a lamprophyre dyke.

The volcanics are fractured and exhibit propylitic alteration. Malachite and azurite staining is common on weathered shears and veins.

A grab sample from this sulphide zone assayed 0.179 per cent copper (Assessment Report 13001). A grab sample from a mafic volcanic, approximately 600 metres to the north, assayed 0.35 gram per tonne gold (Assessment Report 13001).

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EM OF 2001-01

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 499
REPORT: RGEN0100

BIBLIOGRAPHY

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GSC MEM 251
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DATE CODED: 1991/09/28
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 128**

NATIONAL MINERAL INVENTORY:

NAME(S): **VG**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 54 09 N
LONGITUDE: 126 37 36 W
ELEVATION: 1595 Metres

NORTHING: 6309041
EASTING: 644535

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of two visible-gold showings located on a small unnamed creek that drains into Attichika Creek, approximately 6 kilometres northeast of Thorne Lake (Assessment Report 19429).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Permian	Asitka	Unnamed/Unknown Formation	
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Gravel
Basaltic Tuff
Andesite Tuff
Lapilli Tuff
Greenstone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The VG placer occurrence is located on a small unnamed creek that drains into Attichika Creek, approximately 6 kilometres northeast of Thorne Lake.

The bedrock consists of Permian Asitka Group volcanics and sediments. The area is bounded to the west by the north trending Moose Valley fault and to the east by an Early Jurassic quartz monzodiorite. For a more detailed regional geology refer to the Inca occurrence (094D 129).

Visible gold was found in two pans from an unnamed creek in two locations approximately 200 metres apart. One pan contained an angular gold flake 1.5 millimetres in size. Analysis from pan concentrates assayed 4.6, 19.6 and 26.3 grams per tonne gold (4600, 19600 and 26300 parts per billion) (Assessment Report 19249).

BIBLIOGRAPHY

EM OF 2001-01
EMPR ASS RPT *19249
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1991/09/28
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 129**

NATIONAL MINERAL INVENTORY:

NAME(S): **INCA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 53 01 N
LONGITUDE: 126 36 15 W
ELEVATION: 1885 Metres

NORTHING: 6306987
EASTING: 645979

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 6 kilometres northeast of Thorne Lake and 6 kilometres west of the lowermost of the McConnell lakes (Assessment Report 19249).

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite
ALTERATION: Silica Malachite Azurite Epidote Chlorite
K-Feldspar Carbonate Sericite

ALTERATION TYPE: Silicific'n Oxidation Chloritic Epidote Potassic
Sericitic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Porphyry
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Unnamed/Unknown Formation	
Upper Triassic	Takla	Savage Mountain	
Lower Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Porphyritic Basalt
Tuff
Lapilli Tuff
Volcanic Breccia
Argillite
Limestone
Chert
Quartz Monzodiorite

HOSTROCK COMMENTS: The host rock may be volcanics of the Savage Mountain Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Grab
COMMODITY
Silver 14.5000 Grams per tonne
Copper 0.8144 Per cent
REFERENCE: Assessment Report 19249.

CAPSULE GEOLOGY

The Inca occurrence is located approximately 6 kilometres northeast of Thorne Lake and 6 kilometres west of the lowermost of the McConnell lakes.
The occurrence consists of four copper showings with the plotted location centered on a chalcopyrite and bornite showing. Two malachite-stained fracture coatings are located approximately 1 and 2 kilometres northwest of this location and a chalcopyrite showing is located approximately 1 kilometre to the southeast.
The area is underlain by Upper Triassic Savage Mountain Formation (Takla Group) volcanics and Permian Asitka Group volcanics and sediments. These rocks are intruded by an Early Jurassic quartz monzodiorite stock. The area lies within a north trending fault slice bounded to the west by the Moose Valley fault and to the east

CAPSULE GEOLOGY

by the Ingenika fault.

Volcanic rocks in the western portion of the property are commonly porphyritic basalts with interfingered tuffs, lapilli tuffs, volcanic breccias and minor flows. The phenocrysts are predominantly augite and feldspar.

The sedimentary rocks on the property are argillites, limestones, cherts and rare conglomerates. Hornfelsed equivalents of the sedimentary and volcanic rocks are found near the contact of the quartz monzodiorite stock and within the intrusive body as pendants.

Faults within the property are small and discontinuous. Bedding strikes northwest with variable northeast and southwest dips. Minor tight and broad scale folding is apparent in cliff faces.

Alteration in volcanic rocks is predominantly chloritization with lesser epidotization, silicification, carbonatization and rarely, potassic. The dominant alteration in the sediments is silicification. In intrusive rocks, the alteration is similar to that in the volcanic rocks, with the exception of a more pronounced potassic alteration giving the intrusive rocks a strong pink hue (Assessment Report 19249). The intrusive rocks also exhibit minor sericitic alteration.

Mineralization consists of disseminated chalcopyrite and lesser bornite with associated pyrite within the volcanic rocks. Malachite and azurite staining is common on the fractures. Pyrite is found disseminated and as fracture filling, in all rock types. A sample taken from greenstone with malachite and azurite fracture coatings assayed 0.8144 per cent copper and 14.5 grams per tonne silver (Assessment Report 19249).

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EMPR ASS RPT *19249
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1991/09/28
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 130**

NATIONAL MINERAL INVENTORY:

NAME(S): **SER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 59 50 N
LONGITUDE: 126 37 59 W
ELEVATION: 1625 Metres

NORTHING: 6319578
EASTING: 643777

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 4 kilometres west-northwest of Fredrikson Peak and 7 kilometres east of Kemess Creek (Assessment Report 9273).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Porphyry
TYPE: D03 Volcanic redbed Cu L04 Porphyry Cu ± Mo ± Au
DIMENSION: STRIKE/DIP: 090/33N TREND/PLUNGE:
COMMENTS: The general strike and dip of the host rocks (Assessment Report 9273).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Intermediate Volcanic
Massive Andesite
Vesicular Andesite
Chert
Carbonaceous Sediment/Sedimentary
Rhyolite
Granodiorite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1981
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Silver		2.8000	Grams per tonne
Copper		0.3000	Per cent

COMMENTS: Sample from the mineralized massive andesite.
REFERENCE: Assessment Report 9273.

CAPSULE GEOLOGY

The Ser occurrence is located approximately 4 kilometres west-northwest of Fredrikson Peak and 7 kilometres east of Kemess Creek. The occurrence is hosted in Lower Jurassic Telkwa Formation (Hazelton Group) volcanics. Regionally, the volcanic rocks are bounded to the west by the north trending Moose Valley fault. Across the Moose Valley fault lies a thick succession of clastics belonging to the Upper Cretaceous to Eocene Sustut Group. The Telkwa Formation is in fault contact with the Upper Triassic Dewar Formation (Takla Group) to the east. The Dewar Formation is in fault contact with the Permian Asitka Group. These faults are east dipping thrusts. Further east, the Early Jurassic Fredrikson Peak stock intrudes the Asitka Group rocks. Stratigraphically, intermediate volcanics grade upward into interbedded volcanics and cherty to carbonaceous sediments. These

CAPSULE GEOLOGY

are overlain by cherts and rhyolites and are intruded by rocks ranging from granodiorites to diorites.

The andesitic rocks are predominantly vesicular in the upper portions of the sequence, near the sediments, and more massive within the interbedded volcanics and sediments. The rocks locally strike east-west and dip 15 to 50 degrees to the north.

Pyrite and pyrrhotite mineralization is related to a gossanous zone within the intermediate volcanics near the intrusion. The sulphides are found in all rock types in varying quantities. Minor amounts of chalcopyrite and malachite occur in massive andesites within the interbedded volcanic and sedimentary sequence.

A sample from the mineralized massive andesite assayed 2.8 grams per tonne silver and 0.3 per cent copper (Assessment Report 9273).

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EMPR EXPL 1982-421
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 73-31; 76-29

DATE CODED: 1991/09/29
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 131**

NATIONAL MINERAL INVENTORY:

NAME(S): **THORNE CREEK**

MINING DIVISION: Omineca

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094D15E
 BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 48 10 N
 LONGITUDE: 126 36 01 W
 ELEVATION: 1990 Metres

NORTHING: 6298001
 EASTING: 646531

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of zone A, on the ridge north of the headwaters of Thorne Creek about 9 kilometres southeast of Thorne Lake (Assessment Report 13459).

COMMODITIES: Copper Gold Zinc

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Sphalerite
 ALTERATION: Chlorite Epidote K-Feldspar Silica Pyrite

ALTERATION TYPE: Malachite Limonite Epidote Potassic Pyrite Silicific'n
 Chloritic Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
 CLASSIFICATION: Hydrothermal Epigenetic
 TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) 105 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	Unnamed/Unknown Informal
Lower Jurassic			

LITHOLOGY: Augite Porphyry Flow
 Feldspar Porphyry Flow
 Lapilli Tuff
 Monzonite Dike
 Monzodiorite Dike
 Mafic Volcanic
 Intermediate Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
 TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: B REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1984
 SAMPLE TYPE: Chip
 COMMODITY GRADE
 Gold 0.0150 Grams per tonne
 Copper 0.1388 Per cent
 COMMENTS: Chip sample of unspecified length.
 REFERENCE: Assessment Report 13459.

ORE ZONE: A REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1984
 SAMPLE TYPE: Chip
 COMMODITY GRADE
 Copper 0.1011 Per cent
 COMMENTS: Chip sample of unspecified length.
 REFERENCE: Assessment Report 13459.

CAPSULE GEOLOGY

The Thorne Creek occurrence is located on the ridge north of the headwaters of Thorne Creek, approximately 9 kilometres southeast of Thorne Lake (Zone A, Assessment Report 13459).
 The occurrence is hosted in Upper Triassic Savage Mountain Formation (Takla Group) mafic to intermediate volcanics. In the area, the Savage Mountain Formation is bounded to the west by the northwest trending Moose Valley fault and to the east by an Early

CAPSULE GEOLOGY

Jurassic quartz monzodiorite intrusion.

Locally, the area is predominantly underlain by basaltic to andesitic augite porphyry flows. These flows typically have an aphanitic groundmass with euhedral augite phenocrysts averaging 3 to 5 millimetres. Lessor fragmental (lapilli tuffs) rocks and feldspar porphyry flows are also present. These rocks are intruded by a hornblende diorite to the southwest. Several monzonite and monzodiorite dykes occur on the property.

Steeply dipping normal and reverse faults are numerous in the area and have a dominant trend to the north (0 to 10 degrees) and to the east (90 to 100 degrees).

Alteration in the volcanic rocks is widespread. The alteration consists of weak pervasive epidotization and chloritization within the rocks and intense pervasive epidotization and potassic alteration, along fractures and veins. Potassium feldspar, epidote and pyrite veining is common.

Visible copper mineralization is separated into two zones: Zone A and Zone B. Zone A, 15 metres wide, is the larger of the two and trends east. This zone consists of a shear zone with stringers and pods of semi-massive pyrite hosted in epidote and chlorite altered volcanic flows. Minor pyrrhotite, sphalerite and chalcopyrite also occur with the pyrite. A chip sample across this zone assayed 0.1011 per cent copper (Assessment Report 13459).

Zone B lies approximately 900 metres to the east and consists of a north trending pyrite (with minor amounts of chalcopyrite and sphalerite) vein within bleached and silicified feldspar porphyry flows. The pyrite forms discontinuous pods, up to 10 centimetres long and 5 centimetres wide, along an exposed length of 8 metres (Assessment Report 13459). Traces of malachite occur on the fracture surfaces with abundant limonite. A chip sample assayed 0.1388 per cent copper and 0.015 gram per tonne gold (Assessment Report 13459).

Similar mineralization occurs in shears and veins within 1 kilometre to the north.

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EMPR ASS RPT *13459, *18370
EMPR EXPL 1984-346
GSC MAP 962A
GSC MEM 251
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GSC P 73-31; 74-1 Part A; 76-29

DATE CODED: 1991/09/29
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 132**

NATIONAL MINERAL INVENTORY:

NAME(S): **NOR**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15W 094E02W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 00 09 N
LONGITUDE: 126 49 46 W
ELEVATION: 1160 Metres

NORTHING: 6319762
EASTING: 631841

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 2 kilometres east of Thutade Lake and 3 kilometres west of Kemess Creek (Assessment Report 15547).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite

ASSOCIATED: Magnetite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated

CLASSIFICATION: Porphyry

TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Diorite
Granodiorite
Volcanic
Clastic

HOSTROCK COMMENTS: The age of the intrusion is possibly Early Jurassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

Stikine

PHYSIOGRAPHIC AREA: Spatsizi Plateau

CAPSULE GEOLOGY

The Nor occurrence is located approximately 2 kilometres east of Thutade Lake and 3 kilometres west of Kemess Creek.

The area is underlain by Upper Triassic Takla Group volcanic flows, fragmental rocks and lesser sedimentary rocks. To the north, these rocks are intruded by the Lower Jurassic Black Lake granitic stock. To the south, clastics of the Upper Cretaceous to Eocene Sustut Group overlie the older rocks.

Local shears strike northwest and are typically silicified and contain sericite and pyrophyllite.

Mineralization consists of disseminated chalcopyrite with associated pyrite in diorite intruding the Takla volcanics. Magnetite is a common accessory mineral in the intrusives.

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EMPR PF (Cambridge Resources Ltd., Prospectus, 1989)
GSC MAP 962A
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GSC OF 342
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WWW <http://www.infomine.com/>

DATE CODED: 1991/09/30
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 133**

NATIONAL MINERAL INVENTORY:

NAME(S): **RON**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 59 48 N
LONGITUDE: 126 47 25 W
ELEVATION: 1245 Metres

NORTHING: 6319186
EASTING: 634234

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 4 kilometres east of Thutade Lake and 2 kilometres west of Kemess Creek (Assessment Report 12485).

COMMODITIES: Copper Silver Lead

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Galena

ASSOCIATED: Quartz

ALTERATION: Silica Sericite Pyrite

ALTERATION TYPE: Silicific'n Sericitic Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Andesitic Volcanic
Volcanic
Clastic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

PHYSIOGRAPHIC AREA: Spatsizi Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1983

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

0.5000

Grams per tonne

Copper

0.1140

Per cent

REFERENCE: Assessment Report 12485.

CAPSULE GEOLOGY

The Ron occurrence is located approximately 4 kilometres east of Thutade Lake and 2 kilometres west of Kemess Creek.

The area is underlain by Upper Triassic Takla Group volcanic flows, fragmental rocks and lesser sedimentary rocks. To the north, these rocks are intruded by the Lower Jurassic Black Lake granitic stock. To the south, clastics of the Upper Cretaceous to Eocene Sustut Group overlie the older rocks. The rocks are bounded to the east by the north trending Moose Valley fault.

Mineralization consists of disseminated chalcopyrite with associated pyrite. Mineralization occurs in a silicified, sericitized and pyritized shear zone hosted within andesitic volcanics. The shear zone trends north-northeast and is traceable for more than 1 kilometre. A sample from this area assayed 0.114 per cent copper and 0.5 gram per tonne silver (Assessment Report 12485).

Approximately 1 kilometre to the south along this zone is a quartz vein containing pyrite, chalcopyrite and galena.

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GSC MAP 962A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 509
REPORT: RGEN0100

BIBLIOGRAPHY

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GSC OF 342
GSC P 73-31; 76-29

DATE CODED: 1991/09/30
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 134**

NATIONAL MINERAL INVENTORY: 094D9 Cu8

NAME(S): **LAY CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 36 14 N
LONGITUDE: 126 05 18 W
ELEVATION: 1680 Metres

NORTHING: 6277087
EASTING: 678722

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 6 kilometres due east of the northern tip of Johanson Lake (Assessment Report 11842).

COMMODITIES: Gold Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: G04 Besshi massive sulphide Cu-Zn
DIMENSION:
COMMENTS: The strike and dip of the sulphide structure.

STRIKE/DIP: 105 Polymetallic veins Ag-Pb-Zn±Au
140/90 TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Chloritic Andesite
Augite Andesite Flow
Andesitic Tuff
Dacitic Tuff
Pyritic Augite Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1983

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	12.9000	Grams per tonne
Gold	9.5000	Grams per tonne
Copper	0.6850	Per cent

COMMENTS: The highest grades from the massive sulphide zone.

REFERENCE: Assessment Report 11842.

CAPSULE GEOLOGY

The Lay Creek occurrence is located approximately 6 kilometres due east of the northern tip of Johanson Lake.

Regionally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanics. These are bounded to the north by the northwest trending Lay Range fault and to the west by the north trending Dortatelle fault. This succession of volcanics has been intruded to the south by the Early Jurassic Hogen batholith. Approximately 3 kilometres to the east of this occurrence, the volcanics have been intruded by the Early Jurassic Johanson Lake stock.

Locally, the area is underlain by a series of andesitic flows and intercalated fragmental rocks. These fractured fragmental rocks contain angular to rounded andesitic clasts and are carbonate altered. The andesitic volcanics are augite andesite flows, pyritic augite andesite, andesitic to dacitic tuff and highly chloritized andesites. Shales and granodiorites also occur in the area. The flows and tuffs generally strike 140 degrees and dip 70 degrees to

CAPSULE GEOLOGY

the northeast. Shears and gouge materials are usually accompanied by some degree of chloritization.

Mineralization consists of massive sulphides cutting highly chloritized andesites. This vertical massive sulphide zone is 0.70 metre thick and strikes 140 degrees. The zone is possibly a vein containing approximately 20 per cent quartz-carbonate with varying amounts of coarse crystalline pyrite and chalcopyrite and abundant manganese staining. The sulphide zone assayed up to 9.5 grams per tonne gold, 0.685 per cent copper and 12.9 grams per tonne silver (Assessment Report 11842).

BIBLIOGRAPHY

EMPR ASS RPT 10686, *11842
EMPR EXPL 1982-327, 1983-470
EMPR FIELDWORK 1982-124
GSC OF 342
GSC P 76-29
GSC MEM 251
GSC MAP 962A
W MINER 1983, p. 14

DATE CODED: 1991/10/02
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 135**

NATIONAL MINERAL INVENTORY:

NAME(S): **DARB**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 32 56 N
LONGITUDE: 126 07 46 W
ELEVATION: 2020 Metres

NORTHING: 6270861
EASTING: 676456

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 2.5 kilometres east-southeast of the southern tip of Darb Lake (Property File - Burgoyne, A.A., 1973).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Basaltic Volcanic
Meta Volcanic
Porphyritic Andesite
Granodiorite
Syenite
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact

Plutonic Rocks
RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE:

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1973

SAMPLE TYPE: Chip

COMMODITY

GRADE

Copper

1.7000

Per cent

Molybdenum

0.0500

Per cent

COMMENTS: A 0.6-metre sample from a mineralized shear zone.

REFERENCE: Property File - Burgoyne, A.A., 1973.

CAPSULE GEOLOGY

The Darb occurrence is located approximately 2.5 kilometres east-southeast of the southern tip of Darb Lake. The location is centered on a mineralized shear zone and comprises two mineralized shear zones approximately 200 metres apart.

Regionally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanics, bounded to the north by the northwest trending Lay Range fault and to the west by the north trending Dortatelle fault. The succession of volcanics has been intruded to the south by the Early Jurassic Hogem batholith. Just to the north, the volcanics have been intruded by the Early Jurassic Darb Lake stock.

The Takla Group rocks are porphyritic andesites and basaltic volcanics which have been intruded by granodiorites, syenites and diorites.

Mineralization occurs within two shear zones cutting basalts and metavolcanics. The shear zones trend northwest and contain chalcopyrite, pyrite and malachite. These shear zones are erratically mineralized (Property File - Burgoyne, A.A., 1973).

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 513
REPORT: RGEN0100

CAPSULE GEOLOGY

A 0.6-metre sample from one of the shear zones assayed 1.7 per cent copper and 0.05 per cent molybdenum (Property File - Burgoyne, A.A., 1973).

BIBLIOGRAPHY

EMPR PF (*Burgoyne, A.A. (1973): Report on Darb 1-38 Claims for UMEX Corporation Ltd.)
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1991/10/16
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 136**

NATIONAL MINERAL INVENTORY:

NAME(S): **GLACIER, JOH**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 22 N
LONGITUDE: 126 12 45 W
ELEVATION: 1790 Metres

NORTHING: 6267746
EASTING: 671470

LOCATION ACCURACY: Within 500M

COMMENTS: Located just north of a glacier at the headwaters of Solo Creek
(Assessment Report 21394).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Unknown

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins

L02 Porphyry-related Au

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Lower Jurassic			

LITHOLOGY: Hornfels
Volcanic
Sediment/Sedimentary
Andesite
Basalt
Tuff
Lapilli Tuff
Volcaniclastic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Quesnel

METAMORPHIC TYPE: Contact

RELATIONSHIP: Post-mineralization

GRADE: Hornfels

INVENTORY

ORE ZONE: STOCKWORK

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1986

SAMPLE TYPE: Chip

COMMODITY

GRADE

Gold

2.4700

Grams per tonne

COMMENTS: One of the best samples, over 3 metres.

REFERENCE: Assessment Reports 21394, 15313.

CAPSULE GEOLOGY

The Glacier occurrence is located north of a glacier at the headwaters of Solo Creek. The occurrence is related to the Solo, Bruce and Goldway occurrences (094D 012, 094D 013 and 094D 027). Refer to these occurrences for detailed regional and local geology.

Locally, the area is underlain by mainly feldspar, augite and/or hornblende phyric andesites and basalts, tuffs, lapilli tuffs, volcaniclastic siltstones, sandstones and argillites. These rocks, of the Middle Triassic to Lower Jurassic Takla Group, have been regionally metamorphosed and are gently folded. To the northwest, the rocks are intruded by the Early Jurassic Goldway stock (Assessment Report 21394). The stock ranges in composition from hornblende to granodiorite and is predominantly fine to medium-grained diorite to quartz diorite. The volcanics and sediments at the generally sharp contact, are hornfelsed (Assessment Report 21394).

The rocks are deformed by brittle and ductile shearing and faulting, which predominantly trends northwest. Fault zones occur near the northeast and southern contact zones of the intrusion.

CAPSULE GEOLOGY

Large en echelon tension gashes are formed within these shear zones. The volcanics trend northeast and dip between 45 and 70 degrees to the north.

Gold mineralization occurs in quartz stockworks cutting a rusty zone of hornfelsed sediments and volcanics. One of the best samples assayed 2.47 grams per tonne gold over 3 metres (Assessment Report

BIBLIOGRAPHY

EMPR ASS RPT 10809, 11636, 13145, 13175, 14105, *15313, *21394, 21782
EMPR AR 1946-89, 1947-102,106,107,108
EMPR PF (In 094D General File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MEM 251, p. 259
GSC MAP 962A
GSC P 76-29
GSC OF 342

DATE CODED: 1992/03/11
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 137**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOHAN**, DORT, MARIPOSITE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E 094D08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 30 01 N
LONGITUDE: 126 13 41 W
ELEVATION: 1740 Metres

NORTHING: 6265204
EASTING: 670614

LOCATION ACCURACY: Within 500M

COMMENTS: Northern veins, about 4 kilometres southeast of Goldway Peak
(Property File - Canadian Superior Exploration Ltd., Maps from
Company Files, c. 1973).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Unknown
ASSOCIATED: Quartz
ALTERATION: Silica Carbonate
ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: I01 Au-quartz veins L02 Porphyry-related Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Volcanic
Sediment/Sedimentary
Altered Carbonate Quartz Rock

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Johan occurrence is located approximately 4 kilometres southeast of Goldway Peak and is within 3 kilometres of the Bruce (094D 013) and Goldway (94D 027) occurrences. Refer to the Bruce and Goldway occurrences for the regional geology of the area.

The occurrence is hosted within a quartz-carbonate altered zone of the Middle Triassic to Lower Jurassic Takla Group volcanics and sediments. The strata strikes north, dipping predominantly to the east.

The controlling structure of the veins is a northeast trending fault that parallels an informally named (Mariposite) creek.

Mineralization consists of gold-bearing quartz veins in two locations. The second gold-bearing quartz vein occurs approximately 400 metres to the south of the plotted location.

BIBLIOGRAPHY

EMPR ASS RPT 24778
EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM 251, p. 59
GSC OF 342
GSC P 76-29

DATE CODED: 1992/03/10
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 138**

NATIONAL MINERAL INVENTORY:

NAME(S): **TAR**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 46 N
LONGITUDE: 126 15 58 W
ELEVATION: 1920 Metres

NORTHING: 6268355
EASTING: 668143

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a cirque basin, north of Goldway Creek and to the northeast of Goldway Peak (Assessment Report 21394).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Unknown
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins I05 Polymetallic veins Ag-Pb-Zn±Au
L02 Porphyry-related Au
COMMENTS: This occurrence is related to the Bruce (094D 013) vein system.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Goldway Stock

LITHOLOGY: Diorite
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY: Gold
GRADE: 3.8700 Grams per tonne

COMMENTS: Float sample of a proximal quartz vein.
REFERENCE: Assessment Report 21394.

CAPSULE GEOLOGY

The Tar occurrence, located in a cirque basin north of Goldway Creek, is approximately 1 kilometre west of the Bruce (94D 013) veins (Assessment Report 21394). This occurrence is related to the Bruce veins. Refer to the Bruce occurrence for the regional geology of the area.

The veins are hosted in the Early Jurassic Goldway stock (Assessment Report 21394). This intrusion is predominantly consists of diorite and quartz diorite.

Mineralization consists of gold-bearing proximal quartz veins in the talus at the base of the cirque. One of the best samples assayed 3.87 grams per tonne gold (Assessment Report 21394).

BIBLIOGRAPHY

EMPR ASS RPT 11636, 13145, 13175, 14105, 15313, *21394
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1992/03/10
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 139**

NATIONAL MINERAL INVENTORY:

NAME(S): **AUPPER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 28 33 N
LONGITUDE: 126 01 45 W
ELEVATION: 1685 Metres

NORTHING: 6262997
EASTING: 682969

LOCATION ACCURACY: Within 500M

COMMENTS: Located south of Croydon Creek (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Gold Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Unknown

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Andesitic Porphyry
Monzonite
Granodiorite
Sub Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY

	<u>GRADE</u>	
Silver	43.5000	Grams per tonne
Gold	2.7000	Grams per tonne

COMMENTS: A grab sample of a quartz vein containing chalcopyrite and malachite.

REFERENCE: Assessment Report 21521.

CAPSULE GEOLOGY

The Aupper occurrence is located on the north facing slope of a ridge south of Croydon Creek (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The occurrence is hosted in Middle Triassic to Lower Jurassic Takla Group volcanics consisting of basic to intermediate flows, volcanic breccias, tuffs and minor sediments. Immediately to the south of this occurrence is a small Late Triassic Alaskan-type ultramafic intrusion (informally named the Croydon Ultramafic stock). To the west lies a northwest trending monzonite to granodiorite intrusion (Assessment Report 21521).

The major structures in the area are the north to northwest trending Ingenika and Dortatelle faults which lie to the west of this occurrence. Smaller, more localized, faults trend northwest.

There is very little information about this occurrence other than it contains gold and copper (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973) and is hosted in andesitic porphyry and subvolcanics (Assessment Report 21521).

There are numerous chalcopyrite occurrences within 750 metres to the northwest and 300 metres to the southeast. A 3-centimetre quartz vein, containing chalcopyrite and malachite, assayed 2.7 grams per

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 519
REPORT: RGEN0100

CAPSULE GEOLOGY

tonne gold and 43.5 grams per tonne silver (Assessment Report 21521). This vein lies approximately 500 metres to the northwest of the plotted location and trends west-northwest. Copper mineralization typically occurs in quartz veins and shears that trend northwest to northeast. These quartz veins and shears cut intrusive and volcanic rocks.

BIBLIOGRAPHY

EMPR ASS RPT *21521
EMPR PF (In 094D General File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1992/03/12
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 140**

NATIONAL MINERAL INVENTORY:

NAME(S): **KC**, KC 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 28 55 N
LONGITUDE: 126 05 05 W
ELEVATION: 1805 Metres

NORTHING: 6263530
EASTING: 679520

LOCATION ACCURACY: Within 500M

COMMENTS: Located between Croydon and Kliyul creeks (Assessment Report 13580).

COMMODITIES: Gold Silver Lead Zinc Magnetite

MINERALS

SIGNIFICANT: Galena Sphalerite Pyrite Magnetite

ASSOCIATED: Quartz Carbonate

ALTERATION: Silica Sericite Chlorite Pyrite Carbonate

ALTERATION TYPE: Malachite Silicific'n Sericitic Chloritic Pyrite Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Cretaceous

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Kliyul Creek Body

LITHOLOGY: Andesitic Tuff
Greywacke
Calcareous Argillite
Hornblende Porphyry
Dioritic Feldspar Porphyry Dike
Biotite Hornblende Monzonite Porphyry
Hornblende Diorite
Breccia
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1984

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	3.1000	Grams per tonne
Gold	16.2000	Grams per tonne
Lead	0.1580	Per cent
Zinc	0.1320	Per cent

COMMENTS: One of the best samples.
REFERENCE: Assessment Report 13580.

CAPSULE GEOLOGY

The KC occurrence is located between the Croydon and Kliyul creeks, approximately 12 kilometres northeast of Dortatelle Peak (Assessment Report 13580).

Regionally, the area is within the Quesnel Terrane which lies to the east of the Findlay-Ingenika fault system. The strata consists of Middle Triassic to Lower Jurassic Takla Group rocks. In the area, these rocks are predominantly volcanic and consist of mafic to intermediate flows, volcanic breccias and tuffs with minor sediments.

The rocks are subsequently intruded by coeval and later intrusions which range from ultramafics (Alaskan-type) to more felsic rocks (predominantly diorites and granodiorites). The Takla Group is also intruded by the Early Cretaceous Jensen Peak batholith consisting of quartz monzodiorites and the Early Jurassic Hogem

CAPSULE GEOLOGY

batolith which is predominantly foliated quartz monzodiorites. Most major structures in the area trend north to northwest. In the area near this occurrence, the west and northeast bounding structures are the Dortatelle and Lay Range faults respectively. Smaller faults either follow the general trend of the major faults or trend across the trends of the major structures.

Locally, the area is underlain by andesitic tuffs, minor intercalated greywackes and calcareous argillites, and hornblende or feldspar porphyry flows of the Upper Triassic to Lower Jurassic Takla Group. These rocks are intruded by hornblende diorite, dioritic feldspar porphyry dykes and biotite hornblende monzonite porphyry phases of the Early Cretaceous Kliyul Creek body. Emplacement of the intrusive rocks appears to be controlled by a southeast trending splay of the Dortatelle fault (Assessment Report 13580). A 100 to 300-metre wide alteration zone has formed where this fault cuts the andesitic rocks. Alteration minerals include quartz, sericite, chlorite, carbonate and pyrite.

The KC occurrence is described as a north trending silicified fracture zone containing stringers of galena, sphalerite and magnetite. Malachite staining is common along these stringers and fractures. The veins and stringers are pyritiferous and consist of either quartz or quartz-carbonate.

One of the best grab samples assayed 16.2 grams per tonne gold, 3.1 grams per tonne silver, 0.158 per cent lead and 0.132 per cent zinc (Assessment Report 13580).

BIBLIOGRAPHY

EMPR ASS RPT 5600, 5135, 5976, 10950, 10346, *13580, 14416, 15182,
15583
EMPR AR 1947-107,108
EMPR PF (Ritz Resources Ltd., Prospectus, Aug. 26, 1987)
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1992/03/12
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 141**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAL**, CRO 2

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 28 52 N
LONGITUDE: 126 06 11 W
ELEVATION: 1440 Metres

NORTHING: 6263389
EASTING: 678396

LOCATION ACCURACY: Within 500M

COMMENTS: Located near the junction of an unnamed Kliyul Creek tributary and Kliyul Creek (Assessment Report 13580).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Malachite Pyrite

ASSOCIATED: Quartz

ALTERATION: Silica Sericite Chlorite Carbonate Pyrite

ALTERATION TYPE: Malachite

MINERALIZATION AGE: Silicific'n Sericitic Chloritic Pyrite Oxidation

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Triassic-Jurassic
Lower Cretaceous

Takla

Unnamed/Unknown Formation

Kliyul Creek Body

LITHOLOGY: Feldspar Diorite Porphyry
Altered Andesite
Andesitic Tuff
Greywacke
Calcareous Argillite
Hornblende Diorite
Dioritic Feldspar Porphyry Dike
Biotite Hornblende Monzonite Porphyry
Hornblende Porphyry
Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Grab

COMMODITY

GRADE

Gold

0.2940

Grams per tonne

Copper

0.2296

Per cent

COMMENTS: Sample (86820) of a quartz stringer cutting altered andesite.

REFERENCE: Assessment Report 21502.

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1984

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

1.8200

Grams per tonne

Gold

0.1960

Grams per tonne

REFERENCE: Assessment Report 13580.

CAPSULE GEOLOGY

The Mal occurrence is located near the junction of an unnamed, Kliyul Creek tributary and Kliyul Creek. The showing occurs between the KC (094D 140) and Bruce (094D 013) occurrences. Refer to these occurrences for a summary of the regional

CAPSULE GEOLOGY

geology.

Locally, the area is underlain by andesitic tuffs, minor intercalated greywackes and calcareous argillites, and hornblende or feldspar porphyry flows of the Middle Triassic to Lower Jurassic Takla Group. These rocks are intruded by hornblende diorite, dioritic feldspar porphyry dykes and biotite hornblende monzonite porphyry phases of the Early Cretaceous Kliyul Creek body. Emplacement of the intrusive rocks appears to be controlled by a southeast trending splay of the Dortatelle fault (Assessment Report 13580). Alteration zones are formed where faults cut the andesitic rocks. The alteration minerals include quartz, sericite, chlorite, carbonate and pyrite.

The Mal occurrence consists of two malachite-stained veins which are approximately 800 metres apart. At the documented location, a quartz vein occurs in a feldspar diorite porphyry. This vein is stained with malachite and contains disseminated pyrite. A grab sample from this vein assayed 0.196 gram per tonne gold and 1.82 grams per tonne silver (Assessment Report 13580). The second vein is located to the south along Kliyul Creek.

In 1991, sampling was done in the area of this occurrence. On the Cro 2 claim, a sample of a quartz stringer cutting altered andesite assayed 0.294 gram per tonne gold and 0.2296 per cent copper (Assessment Report 21502). This is probably the Mal vein.

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EMPR ASS RPT *3977, 5600, 5135, 5976, 10950, 10346, *13580, 14416,
15182, 15583, *21502
EMPR AR 1947-105
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1992/03/13
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 142**

NATIONAL MINERAL INVENTORY:

NAME(S): **DENUM**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 30 44 N
LONGITUDE: 126 04 40 W
ELEVATION: 1565 Metres

NORTHING: 6266916
EASTING: 679804

LOCATION ACCURACY: Within 500M

COMMENTS: Located on an unnamed north draining creek east of Darb Creek
(Assessment Report 13580).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Epidote Malachite
ALTERATION TYPE: Epidote Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Cretaceous

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Kliyul Creek Body

LITHOLOGY: Andesitic Tuff
Greywacke
Calcareous Argillite
Hornblende Porphyry
Feldspar Porphyry
Hornblende Diorite
Dioritic Feldspar Porphyritic Dike
Biotite Hornblende Monzonite Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Denum occurrence is located on an unnamed creek east of Darb Creek, approximately 8 kilometres southeast of Johanson Lake. The showing occurs to the north of the KC (094D 140) occurrence and east of the Bruce (094D 013) occurrence. For a summary of the regional geology, refer to these occurrences.

Locally, the area is underlain by andesitic tuffs, minor intercalated greywackes and calcareous argillites, and hornblende or feldspar porphyry flows of the Middle Triassic to Lower Jurassic Takla Group. These rocks are intruded by hornblende diorite, dioritic feldspar porphyry dykes and biotite hornblende monzonite porphyry phases of the Early Cretaceous Kliyul Creek body. Emplacement of the intrusive rocks appears to be controlled by a southeast trending splay of the Dortatelle fault (Assessment Report 13580). Alteration zones are formed where faults cut the andesitic rocks.

The Denum occurrence consists of malachite-stained quartz veins. These veins contain chalcopyrite and up to 40 per cent pyrite. The host rocks are predominantly epidote altered, andesitic tuffs (Assessment Report 13580). The massive pyrite forms large, well-developed crystals within the quartz veins (Assessment Report 13580).

BIBLIOGRAPHY

EMPR ASS RPT *13580
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
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PAGE: 525
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 76-29

DATE CODED: 1992/03/16
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 143**

NATIONAL MINERAL INVENTORY:

NAME(S): **CRITTER**, JOH, JO 2

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 06 N
LONGITUDE: 126 07 53 W
ELEVATION: 1960 Metres

NORTHING: 6267457
EASTING: 676478

LOCATION ACCURACY: Within 500M

COMMENTS: Located above a moraine, on a north facing slope of an east-trending ridge south-southeast of Johanson Lake (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Magnetite
ALTERATION: Pyrite
ALTERATION TYPE: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Volcanic
Quartz Diorite

HOSTROCK COMMENTS: The occurrence is near the intrusive-volcanic contact and may be hosted entirely in either of the rock types.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Critter occurrence is located on a north facing slope of an east trending ridge, approximately 7 kilometres south-southeast of Johanson Lake (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The regional geology is similar to that of the Independence (094D 028) occurrence, which lies approximately 2 kilometres to the south-southeast.

The Critter occurrence lies near the contact between an unnamed Early Jurassic quartz diorite stock and Middle Triassic to Lower Jurassic Takla Group volcanics. These rocks lie just to the east of the north striking Dortatelle fault.

Mineralization consists of chalcopyrite and magnetite near a strong pyritic zone (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

BIBLIOGRAPHY

EMPR ASS RPT 21502, 21782
EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM 251, p. 59
GSC OF 342
GSC P 76-29
WWW <http://www.infomine.com/>

DATE CODED: 1992/03/16
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 144**

NATIONAL MINERAL INVENTORY:

NAME(S): **MORAINE, JOH**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 31 26 N
LONGITUDE: 126 08 33 W
ELEVATION: 1725 Metres

NORTHING: 6268047
EASTING: 675769

LOCATION ACCURACY: Within 500M

COMMENTS: Located near the northern end of a moraine, about 6 kilometres south-southeast of Johanson Lake (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite
ALTERATION: Pyrite
ALTERATION TYPE: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Volcanic
Quartz Diorite

HOSTROCK COMMENTS: The occurrence is near the contact and may be hosted entirely in intrusive or volcanic rock.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Moraine occurrence is located near the north end of a moraine, approximately 6 kilometres south-southeast of Johanson Lake (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The regional geology is similar to that of the Independence (094D 028) occurrence, which lies approximately 3 kilometres to the south southeast.

The Moraine occurrence lies near the contact between an unnamed, Early Jurassic quartz diorite stock and Middle Triassic to Lower Jurassic Takla Group volcanics. These rocks lie just to the east of the north striking Dortatelle fault.

Copper mineralization occurs near a strong pyritic zone

BIBLIOGRAPHY

EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
EMPR ASS RPT 21782
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1992/03/16
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 145**

NATIONAL MINERAL INVENTORY:

NAME(S): **KAREN CREEK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 27 30 N
LONGITUDE: 126 02 21 W
ELEVATION: 1890 Metres

NORTHING: 6261023
EASTING: 682438

LOCATION ACCURACY: Within 500M

COMMENTS: Located near the headwaters of the informally named Karen creek on the ridge between Croydon and Kliyul creeks (Assessment Report 21521).

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: 300 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The zone of quartz stringers is approximately 300 metres long and 50 metres wide (Assessment Report 21521).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Unknown

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Dioritic Intrusive
Andesitic Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: STOCKWORK

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY

GRADE

Silver	14.9000	Grams per tonne
Gold	10.4000	Grams per tonne
Copper	1.9900	Per cent

REFERENCE: Assessment Report 21521.

CAPSULE GEOLOGY

The Karen Creek occurrence is located near the headwaters of the informally named Karen creek, on the ridge between Croydon and Kliyul creeks.

The regional geology is similar to that of the Lady Diana occurrence (094D 092) which is approximately 1 kilometre to the south.

Locally, the occurrence is hosted in a faulted and fractured dioritic intrusive body which cuts Middle Triassic to Lower Jurassic Takla Group volcanics. The volcanics are predominantly andesitic in composition. Structurally, the area lies to the north of the informally named Karen Creek fault which strikes northwest (Assessment Report 21521).

The Karen occurrence consists of a zone of quartz stringers approximately 300 metres long and 50 metres wide, trending to the northeast. These stringers contain various amounts of pyrite and chalcopyrite. A grab sample from this zone assayed 14 grams per tonne gold, 20 grams per tonne silver and 0.340 per cent copper. Another grab sample assayed 10.4 grams per tonne gold, 14.9 grams per tonne silver and 1.99 per cent copper (Assessment Report 21521).

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RUN TIME: 11:51:27

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BIBLIOGRAPHY

EMPR ASS RPT 21394, *21521
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1992/03/17
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 146**

NATIONAL MINERAL INVENTORY:

NAME(S): **ASITKA LAKE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 34 48 N
LONGITUDE: 126 23 32 W
ELEVATION: 1885 Metres

NORTHING: 6273678
EASTING: 660176

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 3 kilometres north of Asitka Lake and 12 kilometres west of Johanson Lake (Property File - Canadian Superior Exploration Ltd., Maps from Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
COMMENTS: The mineralization is probably similar to that of the Arjay (094D 011) occurrence.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic Lower Jurassic	Takla	Savage Mountain	Asitka Peak Stock

LITHOLOGY: Intermediate Porphyry
Quartz Diorite
Chloritic Tuff
Agglomerate
Epiclastic Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Asitka Lake occurrence is located approximately 3 kilometres north of Asitka Lake and 12 kilometres west of Johanson Lake.

The regional geology is similar to that of the Arjay (094D 011) occurrence which lies 1.5 kilometres to the west.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). The formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. These stratified rocks are intruded by the Early Jurassic Asitka Peak quartz diorite stock.

There is very little information on the copper mineralization except that it is hosted within the volcanics and is in close proximity to a quartz diorite body to the south. It is likely that this mineralization is similar to the Arjay occurrence (094D 011).

BIBLIOGRAPHY

EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MAP 962A
GSC MEM 251, p. 62
GSC OF 342
GSC P 76-29

DATE CODED: 1992/03/20
DATE REVISED: 1992/06/12

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 147**

NATIONAL MINERAL INVENTORY:

NAME(S): **A-1**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 36 04 N
LONGITUDE: 126 24 37 W
ELEVATION: 1725 Metres

NORTHING: 6275985
EASTING: 658978

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of surface mineralization near the A-1 drill hole (Assessment Report 5202).

COMMODITIES: Copper Gold Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Molybdenite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Quartz
ALTERATION TYPE: Oxidation Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Upper Triassic
Lower Jurassic

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Asitka Peak Stock

LITHOLOGY: Hornblende Biotite Granodiorite
Quartz Diorite
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1974

SAMPLE TYPE: Drill Core

COMMODITY

GRADE

Copper

0.0900

Per cent

COMMENTS: Two 3.3-metre intervals contained 0.09 per cent copper.

REFERENCE: Assessment Report 5437.

CAPSULE GEOLOGY

The A-1 occurrence is A-1 drill hole (Assessment Report 5202), located approximately 1.5 kilometres east of Asitka Peak and 15 kilometres west of Johanson Lake.

The regional geology is similar to that of the A-4 occurrence (094D 087) which lies approximately 1 kilometre to the northwest.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group) rocks. The formation consists of greenish to red-brown intermediate porphyritic flows, chloritic tuffs and agglomerates, and minor intercalated epiclastic sediments. These stratified rocks are intruded by the Early Jurassic Asitka Peak stock which ranges from hornblende and/or biotite granodiorite to quartz diorite. These rocks are cut by basic dykes, generally less than 3 metres thick, which are finely feldspar porphyritic (Assessment Report 5202).

Copper mineralization is hosted within the intrusion and occurs as chalcopyrite with minor bornite and associated pyrite in fractures and quartz stringers. Malachite staining is present along the fractures. Two 3.3-metre drill intervals assayed 0.09 per cent copper (Assessment Report 5202). Gold and molybdenum values are typically low. Another 3.3-metre drill interval assayed 0.17 gram per tonne gold (Assessment Report 5202).

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RUN TIME: 11:51:27

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BIBLIOGRAPHY

EM OF 2001-18
EMPR ASS RPT 4603, 4753, *5202, *5437, 9546, 20006
EMPR GEM 1973-410; 1974-304
GSC MAP 962A
GSC MEM 251
GSC OF 342
GSC P 76-29

DATE CODED: 1992/03/25
DATE REVISED: 1992/06/15

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 149**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER KING, AL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 41 30 N
LONGITUDE: 126 28 11 W
ELEVATION: 1860 Metres

NORTHING: 6285930
EASTING: 654950

LOCATION ACCURACY: Within 500M

COMMENTS: The location of the original Copper King showing (Open File 2001-2).

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Bornite Chalcocite
COMMENTS: A disseminated, black, earthy mineral could possibly be chalcocite (Assessment Report 21064).

ASSOCIATED: Magnetite

ALTERATION: Malachite Azurite Limonite Epidote

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Stratabound

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: D03 Volcanic redbed Cu

SHAPE: Tabular

MODIFIER: Fractured

DIMENSION: STRIKE/DIP: 080/80S

COMMENTS: The No. 2 showing strikes 80 degrees and dips 80 degrees to the north (Assessment Report 21064).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Upper Triassic

GROUP

Takla
Takla

FORMATION

Savage Mountain
Moosevale

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Pyroxene Basalt Porphyry
Feldspar Porphyry
Pyroclastic
Agglomerate
Breccia
Lapilli Tuff
Feldspar Diorite Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: 2

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Chip

COMMODITY

GRADE

Silver

7.9000

Grams per tonne

Gold

0.1150

Grams per tonne

Copper

0.7600

Per cent

COMMENTS: A composite of two chip samples, both across 0.4 metre of the No. 2 showing.

REFERENCE: Assessment Report 21064.

ORE ZONE: 1

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Chip

COMMODITY

GRADE

Copper

0.0937

Per cent

COMMENTS: Sample across the 0.3-metre No. 1 showing fracture zone.

REFERENCE: Assessment Report 21064.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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PAGE: 536
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 962A
GSC MEM 251, p. 62
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Monger, J.W.H. (1984): Cordilleran Tectonics: A Canadian
Perspective, Geol. Soc. France Bull., Ser. 7, v. 26, no. 2, p.
255-278

DATE CODED: 1992/03/30
DATE REVISED: 2001/07/24

CODED BY: DMM
REVISED BY: ASL

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094D 150**

NATIONAL MINERAL INVENTORY:

NAME(S): **NIKA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 40 33 N
LONGITUDE: 126 25 09 W
ELEVATION: 1525 Metres

NORTHING: 6284279
EASTING: 658120

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a northeast flowing tributary of the Ingenika River
(Assessment Report 4593).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	

LITHOLOGY: Feldspar Porphyry
Pyroclastic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Nika occurrence is located on a northeast flowing tributary of the Ingenika River (Assessment Report 4593) approximately 15 kilometres northwest of Johanson Lake.

The regional geology is similar to that of the Copper King occurrence (094D 149) which lies approximately 4 kilometres to the northwest.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group) which is overlain by the Lower Jurassic Telkwa Formation (Hazelton Group). These successions of predominantly volcanic rocks are intruded by an unnamed Early Jurassic quartz diorite intrusion. Stratigraphically, the oldest rocks are pyroxene porphyry flows overlain by bladed feldspar porphyry flows. These volcanics belong to the Savage Mountain Formation and are overlain by a mixed package of pyroclastics which include a well-bedded waterlain sequence, agglomerates, breccias and lapilli tuffs which may belong to the Telkwa Formation (Assessment Report 5256). These rocks are cut by quartz diorite intrusive bodies.

The strata dip gently to the west and are moderately fractured and jointed. The dominant joint attitude is 45 degrees, dipping 85 degrees to the northwest with a secondary pattern trending 160 degrees, dipping 75 degrees to the west (Assessment Report 4593). Local faulting and shearing generally trends northeast and west.

Mineralization consists of chalcopyrite in a 0.6-metre wide epidote vein cutting either the bladed feldspar porphyry or pyroclastic rocks (Assessment Report 4593). There is very little information available on this occurrence.

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EMPR GEM 1973-410
EMPR PF (In 094D General File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
EMR MP CORPFILE (Texore Mines Ltd.)
GSC MAP 962A

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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BIBLIOGRAPHY

GSC MEM 251, p. 62
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DATE CODED: 1992/02/03
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 151**

NATIONAL MINERAL INVENTORY:

NAME(S): **ING, Z 1-60**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 39 44 N
LONGITUDE: 126 25 27 W
ELEVATION: 1930 Metres

NORTHING: 6282753
EASTING: 657870

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a north-northeast trending ridge at the headwaters of the Ingenika River (Property File - Canadian Superior Exploration Ltd., Maps from Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcocite
ASSOCIATED: Epidote Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Ing occurrence is located on a north-northeast trending ridge at the headwaters of the Ingenika River (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973), approximately 14 kilometres west-northwest of Johanson Lake.

The regional geology is similar to that of the Copper King occurrence (094D 149) which lies approximately 5 kilometres to the northwest.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group) which is overlain by the Lower Jurassic Telkwa Formation (Hazelton Group). These successions of predominantly volcanic rocks are intruded by an unnamed Early Jurassic quartz diorite intrusion. Stratigraphically, the oldest rocks are pyroxene porphyry flows overlain by bladed feldspar porphyry flows. These volcanics belong to the Savage Mountain Formation and are overlain by a mixed package of pyroclastics which include a well-bedded waterlain sequence, agglomerates, breccias and lapilli tuffs which may belong to the Telkwa Formation (Assessment Report 5256). These rocks are cut by quartz diorite intrusive bodies.

The strata dip gently to the west and are moderately fractured and jointed. The dominant joint attitude is 45 degrees, dipping 85 degrees to the northwest with a secondary pattern trending 160 degrees, dipping 75 degrees to the west (Assessment Report 4593). Local faulting and shearing generally trends northeast and west.

At the location, mineralization occurs as chalcocite in a 10-centimetre wide epidote vein, cutting bladed feldspar porphyry (Assessment Report 4593). This type of mineralization is typical for the ridge. A drill hole tested a narrow, discontinuous, mineralized shear zone filled with narrow, erratic, chalcocite-bearing carbonate and epidote veinlets (Assessment Report 4593). The drill hole is located approximately 900 metres along the ridge from the vein.

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EMPR GEM 1973-410

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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PAGE: 540
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GSC OF 342
GSC P 76-29

DATE CODED: 1993/04/03
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 152**

NATIONAL MINERAL INVENTORY:

NAME(S): **GENI**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 38 52 N
LONGITUDE: 126 26 14 W
ELEVATION: 1430 Metres

NORTHING: 6281115
EASTING: 657130

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a south flowing tributary of Johanson Creek (Assessment Report 4593).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Copper Chalcopyrite

ASSOCIATED: Epidote

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	

LITHOLOGY: Feldspar Porphyry
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Geni occurrence is located on a south flowing tributary of Johanson Creek (Assessment Report 4593), approximately 15 kilometres west of Johanson Lake.

The regional geology is similar to that of the Copper King occurrence (094D 149) which lies approximately 5 kilometres to the northwest.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group) which is overlain by the Lower Jurassic Telkwa Formation (Hazelton Group). These successions of predominantly volcanic rocks are intruded by an unnamed Early Jurassic quartz diorite intrusion. Stratigraphically, the oldest rocks are pyroxene porphyry flows overlain by bladed feldspar porphyry flows. These volcanics belong to the Savage Mountain Formation and are overlain by a mixed package of pyroclastics which include a well-bedded waterlain sequence, agglomerates, breccias and lapilli tuffs which may belong to the Telkwa Formation (Assessment Report 5256). These rocks are cut by quartz diorite intrusive bodies.

The strata dip gently to the west and are moderately fractured and jointed. The dominant joint attitude is 45 degrees, dipping 85 degrees to the northwest with a secondary pattern trending 160 degrees, dipping 75 degrees to the west (Assessment Report 4593). Local faulting and shearing generally trends northeast and west.

At the location, mineralization occurs as disseminated native copper within bladed feldspar porphyry. It is estimated to contain 0.1 per cent copper (Assessment Report 4593).

Chalcopyrite within epidote veinlets also occurs in a basalt unit just to the south of the basalt-porphyry contact (Assessment Report 4593).

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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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DATE CODED: 1992/04/03
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 153**

NATIONAL MINERAL INVENTORY:

NAME(S): **JO, Z 1-60**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 39 12 N
LONGITUDE: 126 24 38 W
ELEVATION: 1755 Metres

NORTHING: 6281795
EASTING: 658742

LOCATION ACCURACY: Within 500M

COMMENTS: Located north of Johanson Creek, 13 kilometres west-northwest of Johanson Lake.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Bornite Chalcocite

ASSOCIATED: Epidote

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	

LITHOLOGY: Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Jo occurrence is located north of Johanson Creek, near the headwaters of the Ingenika River (Assessment Report 4593). It lies approximately 13 kilometres west-northwest of Johanson Lake. This occurrence has similar regional geology to that of the Copper King occurrence (094D 149) which lies approximately six kilometres to the northwest.

Locally, the area is underlain by the Upper Triassic Savage Mountain Formation (Takla Group). It is overlain by the Lower Jurassic Telkwa Formation (Hazelton Group). These successions of predominantly volcanic rocks are intruded by an unnamed Early Jurassic quartz diorite intrusion. Stratigraphically, the oldest rocks are pyroxene porphyry flows overlain by bladed feldspar porphyry flows. These volcanics belong to the Savage Mountain Formation and are overlain by a mixed package of pyroclastics which include a well bedded water lain sequence, agglomerates, breccias and lapilli tuffs which may belong to the Telkwa Formation (Assessment Report 5256). These rocks are cut by quartz diorite intrusive bodies.

The strata dip gently to the west and are moderately fractured and jointed. The dominant joint attitude is 45 degrees dipping 85 degrees to the northwest with a secondary pattern trending 160 degrees dipping 75 degrees to the west (Assessment Report 4593). Local faulting and shearing generally trends to the northeast and to the west.

At the plotted location, copper mineralization occurs as bornite in epidote veins (Assessment Report 5256). The veins are hosted in bladed feldspar porphyry. Other epidote veins and epidote shears within 300 metres to the east of this occurrences contain chalcocite and bornite (Assessment Report 4593).

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EMR MP CORPFILE (Texore Mines Ltd.)

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
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ENERGY AND MINERALS DIVISION

PAGE: 544
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DATE CODED: 1992/04/03
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 154**

NATIONAL MINERAL INVENTORY:

NAME(S): **OVERSTALL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D15E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 45 45 N
LONGITUDE: 126 30 26 W
ELEVATION: 1645 Metres

NORTHING: 6293722
EASTING: 652375

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a south flowing tributary of Menard Creek (Assessment Report 4707).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Chalcopyrite	Pyrite			
ALTERATION:	Pyrite	Serpentine	Chlorite		
ALTERATION TYPE:	Pyrite	Propylitic	Serpentin'zn	Chloritic	
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Savage Mountain	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Aphanitic Andesite
Porphyritic Granodiorite Dike
Porphyritic Andesite
Altered Andesite
Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Overstall occurrence is located on a south flowing tributary of Menard Creek (Assessment Report 4707).

The regional and local geology is similar to that of the Ard occurrence (094D 090).

Locally, the area is cut by a north trending fault that separates andesitic rocks of the Upper Triassic Savage Mountain Formation (Takla Group) to the west from an undifferentiated package of Upper Triassic volcanics (Takla Group) to the east. Both volcanic packages are represented by aphanitic to porphyritic (feldspar) andesites (Assessment Report 4707).

The undifferentiated volcanics are cut by a medium-grained gabbro with phenocrysts of plagioclase feldspar and pyroxene (Assessment Report 4707).

The Savage Mountain volcanics are cut by northwest trending pink porphyritic granodiorite dykes. These dykes contain hornblende and plagioclase phenocrysts in a matrix of quartz, plagioclase and orthoclase (Assessment Report 4707). Close to the faults, the matrix is chlorite altered. The dykes terminate against the north trending fault.

A 60-metre pyritic and propylitic envelope exists on either side of the fault (Assessment Report 4707). A serpentinite-altered zone is developed around the gabbro intrusion and is more pervasive near the fault. This serpentinization overlaps onto both sides of the fault and is fairly widespread near the mafic intrusion.

Mineralization consists of chalcopyrite in pyritic shears near the margin of a granodiorite dyke.

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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 546
REPORT: RGEN0100

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DATE CODED: 1992/04/09
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 155**

NATIONAL MINERAL INVENTORY:

NAME(S): **NIGHTFLY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 44 11 N
LONGITUDE: 126 28 35 W
ELEVATION: 1620 Metres

NORTHING: 6290886
EASTING: 654366

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a ridge south of Menard Creek and west of the Ingenika River (Property File - Canadian Superior Exploration Ltd., Maps from Company Files, c. 1973).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Aphanitic Andesite
Porphyritic Andesite
Porphyritic Granodiorite Dike
Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Nightfly occurrence is located on a ridge south of Menard Creek and west of the Ingenika River (Property File - Canadian Superior Exploration Limited, Maps from Company Files, c. 1973).

The regional and local geology is similar to that of the Ard occurrence (094D 090).

Locally, the area is cut by a north trending fault that separates andesitic rocks of the Upper Triassic Savage Mountain Formation (Takla Group) to the west from an undifferentiated package of Upper Triassic volcanics (Takla Group) to the east. Both volcanic packages are represented by aphanitic to porphyritic (feldspar) andesites (Assessment Report 4707).

The undifferentiated volcanics are cut by medium-grained gabbro with phenocrysts of plagioclase feldspar and pyroxene (Assessment Report 4707).

The Savage Mountain volcanics are cut by northwest trending, pink porphyritic granodiorite dykes. These dykes contain hornblende and plagioclase phenocrysts in a matrix of quartz, plagioclase and orthoclase (Assessment Report 4707).

Copper mineralization with associated pyrite occurs near the fault.

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EMPR ASS RPT *4707
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EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
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GSC P 76-29

DATE CODED: 1992/04/09
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 155**

MINFILE NUMBER: **094D 156**

NATIONAL MINERAL INVENTORY:

NAME(S): **FOX**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 42 36 N
LONGITUDE: 126 15 04 W
ELEVATION: 1395 Metres

NORTHING: 6288480
EASTING: 668260

LOCATION ACCURACY: Within 500M

COMMENTS: Located about 100 metres west of Wrede Creek and 6 kilometres south of Fleet Peak (Assessment Report 6369).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite

ASSOCIATED: Magnetite

ALTERATION: Serpentine

ALTERATION TYPE: Serpentin'zn

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive

CLASSIFICATION: Unknown

TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Unknown

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Serpentinized Peridotite
Volcaniclastic
Feldspar Hornblende Crystal Tuff
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Fox occurrence is located approximately 100 metres west of Wrede Creek and 6 kilometres south of Fleet Peak (Assessment Report 6369).

The regional geology is similar to that of the Shred occurrence (094D 111).

Locally, the Middle Triassic to Lower Jurassic Takla Group is represented by a volcanoclastic unit, a feldspar hornblende crystal tuff and a feldspar porphyry dyke. The volcanoclastic unit consists of sandy limestone, fine-grained andesitic tuff, crystal tuff and agglomerate. The limestone bed strikes 140 degrees and dips 76 degrees to the east (Assessment Report 8213). The dyke is a grey rhyodacite and the contacts with the crystal tuff unit are sheared and brecciated. The breccia fragments are deformed, chlorite altered and rimmed with pyrite (Assessment Report 8213). Ultramafic (pyroxenite-peridotite) to mafic (gabbro) intrusions are also present.

Mineralization is described as three small, massive veins or lenses consisting of magnetite, pyrite, pyrrhotite and chalcopyrite. The lenses or veins cut a serpentinized peridotite body (Assessment Report 6369).

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DATE CODED: 1992/04/16
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 156**

MINFILE NUMBER: **094D 157**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOUND**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 42 44 N
LONGITUDE: 126 16 42 W
ELEVATION: 1525 Metres

NORTHING: 6288661
EASTING: 666585

LOCATION ACCURACY: Within 500M

COMMENTS: Diamond drill hole SDH 79-5 (Assessment Report 8213).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite
ASSOCIATED: Quartz Calcite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic

GROUP

Takla

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dacitic Lapilli Tuff
Volcaniclastic
Feldspar Hornblende Crystal Tuff
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Hound occurrence is located on the 1979 diamond drill hole SDH 79-5 (Assessment Report 8213), approximately 5 kilometres south of Fleet Peak.

The regional geology is similar to that of the Shred occurrence (094D 111).

Locally, the Middle Triassic to Lower Jurassic Takla Group is represented by a volcanoclastic unit, a feldspar hornblende crystal tuff and a feldspar porphyry dyke. The volcanoclastic unit consists of sandy limestone, fine-grained andesitic tuff, crystal tuff and agglomerate. The limestone bed strikes 140 degrees and dips 76 degrees to the east (Assessment Report 8213). The dyke is a grey rhyodacite and the contacts with the crystal tuff unit are sheared and brecciated. The breccia fragments are deformed, chlorite altered and rimmed with pyrite (Assessment Report 8213). Ultramafic (pyroxenite-peridotite) to mafic (gabbro) intrusives are also present.

Mineralization consists of minor amounts of chalcopyrite in quartz-calcite veins cutting a dacitic lapilli tuff (Assessment Report 8213). Pyrite and pyrrhotite mineralization is found associated with these veins.

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GSC OF 342
GSC P 76-29

DATE CODED: 1992/04/16
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 158**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAT**

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 44 24 N
LONGITUDE: 126 19 38 W
ELEVATION: 1660 Metres

NORTHING: 6291634
EASTING: 663473

LOCATION ACCURACY: Within 500M

COMMENTS: Diamond drill hole R-84-11, which is approximately 4 kilometres south of Fleet Peak (Assessment Report 13316).

COMMODITIES: Copper Gold Molybdenum

MINERALS

SIGNIFICANT:	Chalcopyrite	Pyrite	Chrysocolla	Molybdenite
ASSOCIATED:	Quartz	Epidote	Calcite	
ALTERATION:	Malachite	Sericite	Chlorite	
ALTERATION TYPE:	Oxidation		Propylitic	Sericitic
MINERALIZATION AGE:	Unknown			

DEPOSIT

CHARACTER:	Vein	Stockwork	Shear	Disseminated
CLASSIFICATION:	Porphyry	Hydrothermal	Epigenetic	
TYPE:	L04	Porphyry Cu ± Mo ± Au		
SHAPE:	Tabular			
MODIFIER:	Sheared	Fractured		

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Fleet Peak Pluton
Lower Jurassic			

LITHOLOGY: Altered Andesite
Quartz Diorite Porphyry
Diorite
Andesitic Flow
Andesitic Tuff
Hornblende Diorite
Augite Porphyry
Hornblende Porphyry
Dike
Sill

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: DRILLHOLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1984
SAMPLE TYPE: Drill Core	
<u>COMMODITY</u>	<u>GRADE</u>
Gold	0.4000 Grams per tonne
Copper	0.9300 Per cent
COMMENTS: A 3-metre drill interval from drill hole R-84-11.	
REFERENCE: Assessment Report 13316.	

CAPSULE GEOLOGY

The Hat occurrence is located on the 1984 diamond drill hole R-84-11, approximately 4 kilometres south of Fleet Peak (Assessment Report 13316).

The regional geology is similar to that of the Shred occurrence (094D 111) which lies approximately 5 kilometres to the southeast.

Locally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group andesitic flows and tuffs, augite porphyry and hornblende porphyry. These rocks have been intruded by diorite, quartz diorite, hornblende diorite, quartz diorite porphyry and diorite porphyry related to the Early Jurassic Fleet Peak pluton. The dioritic rocks are predominantly dykes and sills. The rocks generally form west-northwest trending, lenticular slivers and are

CAPSULE GEOLOGY

cut by local west-northwest trending faults.

Alteration is generally phyllic and argillic, becoming increasingly more propylitic with depth. Alteration minerals include sericite, quartz, epidote, chlorite, pyrophyllite and calcite.

Chalcopyrite with associated pyrite is generally found in veins and veinlets composed of quartz, epidote and calcite. Chalcopyrite tends to occur within the pyrite blebs and molybdenite is typically found along the vein margins. The mineralized veins are found in both the volcanic and plutonic rocks. The best 3-metre drill interval from hole R-84-11 assayed 0.93 per cent copper and 0.4 gram per tonne gold (Assessment Report 13316). The interval contained sericite and chlorite-altered andesite cut by a 5-centimetre wide shear. Mineralization consisted of minor disseminated chalcopyrite with associated pyrite.

Surface copper mineralization, approximately 450 metres to the east, consists of chalcopyrite, chrysocolla and malachite near the contact between a quartz diorite porphyry and diorite intrusion (Assessment Report 1941).

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DATE CODED: 1992/04/22
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 159**

NATIONAL MINERAL INVENTORY:

NAME(S): **MIDAS**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 46 38 N
LONGITUDE: 126 23 05 W
ELEVATION: 1605 Metres

NORTHING: 6295640
EASTING: 659799

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a west flowing tributary of the Ingenika River, 5 kilometres southeast of the McConnell Creek placer occurrence (094D 007) (Property File - Canadian Superior Exploration Ltd., Maps from Company Files, c. 1973).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Gravel

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Midas occurrence is located on a west flowing tributary of the Ingenika River, 5 kilometres southeast of the McConnell Creek placer occurrence (094D 007).

There is very little information available on this occurrence. It was described as placer workings in 1973 by Canadian Superior Exploration Limited (Property File - Canadian Superior Exploration Limited, company files and maps, c. 1973).

The tributary drains Middle Triassic to Lower Jurassic Takla Group volcanic rocks which have been intruded by an Early Cretaceous quartz diorite.

BIBLIOGRAPHY

EMPR PF (In 094D General File - *Canadian Superior Exploration Limited, Maps from Company Files, c. 1973)
GSC MEM 251
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1992/04/24
DATE REVISED: 1992/06/15

CODED BY: DMM
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 160**

NATIONAL MINERAL INVENTORY:

NAME(S): **FISHER**, INGE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 41 07 N
LONGITUDE: 126 15 18 W
ELEVATION: 1690 Metres

NORTHING: 6285720
EASTING: 668133

LOCATION ACCURACY: Within 500M

COMMENTS: Located near the headwaters of Wrede Creek on a northeast facing slope (Assessment Report 14630).

COMMODITIES: Gold Copper Lead Silver

MINERALS

SIGNIFICANT: Chalcopyrite Galena Pyrite
ASSOCIATED: Quartz
ALTERATION: Epidote Malachite Azurite Silica
ALTERATION TYPE: Epidote Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: STRIKE/DIP: 160/52S TREND/PLUNGE:
COMMENTS: The strike and dip of the Fisher vein (Assessment Report 14630).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Takla Unnamed/Unknown Formation

LITHOLOGY: Hornblende Porphyritic Flow
Altered Tuff
Andesitic Tuff
Lapilli Tuff
Agglomerate
Flow
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel

INVENTORY

ORE ZONE: VEIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Gold 1.3710 Grams per tonne
COMMENTS: A grab sample from the Fisher vein.
REFERENCE: Assessment Report 14630.

CAPSULE GEOLOGY

The Fisher occurrence is located near the headwaters of Wrede Creek on a northeast-facing slope, approximately 9 kilometres north-northwest of Johanson Lake (Assessment Report 14630). The occurrence is similar to the Quyzvvhx occurrence (094D 010). Locally, the Middle Triassic to Lower Jurassic Takla Group is represented by felsic to intermediate volcanics and clastic sedimentary rocks. In order of abundance, the rock types are; andesitic tuffs, lapilli tuffs, agglomerates and flows (Assessment Report 14630). The sedimentary rocks are predominantly dark grey to black argillites intercalated within the volcanics. The general strike of the sedimentary rocks is east-west, dipping approximately 30 degrees to the north (Assessment Report 14630). These rocks are intruded by hornblende diorite and hornblende biotite diorite dykes and sills. The dykes and sills are 0.5 to 8 metres in thickness (Assessment Report 14630). Shearing has developed near the contact of the sedimentary and volcanic rocks with the dykes and sills. Alteration haloes are

CAPSULE GEOLOGY

relatively thin and typically extend 1 metre from the intrusive contacts (Assessment Report 14630). An alteration zonation is present; the rocks close to the intrusions are clay and silica altered and further from the intrusions, the rocks exhibit chlorite and epidote alteration (Assessment Report 14630). Alteration within the intrusion is primarily uralitization and chloritization of the mafic minerals, with lesser sericitic and epidote alteration.

The Fisher vein is a 5 to 10-centimetre thick white quartz vein traceable for 35 metres. The vein strikes 160 degrees and dips 52 degrees to the southwest (Assessment Report 14630). The quartz vein is vuggy, fractured and cuts hornblende porphyritic flows and altered epidote and silica altered tuffs. Mineralization consists of chalcopyrite, galena, with minor malachite and azurite and associated pyrite. A grab sample from this vein assayed 1.371 grams per tonne gold (Assessment Report 14630).

BIBLIOGRAPHY

EMPR ASS RPT 10341, 12803, 13585, *14630, *15586, 17409, 20109,
*21358
EMPR AR 1947-108
EMPR PF (In 094D 010 - Ritz Resources Ltd., August 26, 1987,
Prospectus)
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29

DATE CODED: 1992/04/28
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 161**

NATIONAL MINERAL INVENTORY:

NAME(S): **INGE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 39 59 N
LONGITUDE: 126 14 01 W
ELEVATION: 1560 Metres

NORTHING: 6283671
EASTING: 669527

LOCATION ACCURACY: Within 500M

COMMENTS: Located near the headwaters of Wrede Creek on a northwest flowing tributary (Assessment Report 14630).

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Pyrrhotite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Andesitic Volcanic Rock
Argillaceous Sediment/Sedimentary
Sericite Schist
Felsic Volcanic
Intermediate Volcanic
Clastic
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1985

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

8.3000

Grams per tonne

Gold

1.1820

Grams per tonne

COMMENTS: A grab sample from a sulphide bearing quartz vein.

REFERENCE: Assessment Report 14630.

CAPSULE GEOLOGY

The Inge occurrence is located near the headwaters of Wrede Creek, on a northwest flowing tributary, approximately 9 kilometres north-northwest of Johanson Lake (Assessment Report 14630). This occurrence is similar to the Quyzvvh occurrence (094D 010) which is approximately 1.5 kilometres to the west.

Locally, the Middle Triassic to Lower Jurassic Takla Group is represented by felsic to intermediate volcanics and clastic sedimentary rocks. In order of abundance, the rock types are; andesitic tuffs, lapilli tuffs, agglomerates and flows (Assessment Report 14630). The sedimentary rocks are predominantly dark grey to black argillites intercalated within the volcanics. The general strike of the sedimentary rocks is east-west, dipping approximately 30 degrees to the north (Assessment Report 14630).

These rocks are intruded by hornblende diorite and hornblende biotite diorite dykes and sills. The dykes and sills are 0.5 to 8 metres in thickness (Assessment Report 14630).

Mineralization is hosted in a small quartz vein in a shear zone cutting argillaceous sediments and andesitic volcanic rocks

CAPSULE GEOLOGY

(Assessment Report 14630). The shear zone is composed of sericite schist. The vein is vuggy, 1 to 10 centimetres wide over a length of 5 metres, and contains disseminated pyrite, chalcopyrite, pyrrhotite and malachite (Assessment Report 14630).
A grab sample from this vein assayed 1.182 grams per tonne gold and 8.3 grams per tonne silver (Assessment Report 14630).

BIBLIOGRAPHY

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*21358
EMPR AR 1947-108
EMPR PF (In 094D 010 - Ritz Resources Ltd., August 26, 1987,
Prospectus)
GSC MEM 251, p. 59
GSC MAP 962A
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DATE CODED: 1992/04/28
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 162**

NATIONAL MINERAL INVENTORY:

NAME(S): **REDGOLD**, TUNDRA

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 38 56 N
LONGITUDE: 126 05 34 W
ELEVATION: 1405 Metres

NORTHING: 6282082
EASTING: 678237

LOCATION ACCURACY: Within 500M
COMMENTS: A 1978 trench (Assessment Report 7249).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Upper Triassic			

LITHOLOGY: Feldspar Porphyry
Meta Volcanic
Hornblendite
Ultramafic
Quartz Diorite
Andesite
Pyroclastic
Flow
Argillite

HOSTROCK COMMENTS: The ultramafic intrusion is informally named the Wrede Creek ultramafic complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Hornfels
Amphibolite

CAPSULE GEOLOGY

The Tundra occurrence is located in a 1978 trench (Assessment Report 7249), approximately 9 kilometres north-northeast of the south end Johanson Lake.

The regional geology is similar to that of the Nik occurrence (094D 109), which lies approximately 4 kilometres to the northwest.

Locally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanic rocks which have been intruded by a Late Triassic ultramafic body. This body is composed of dunite, peridotite, pyroxenite and hornblendite. A quartz diorite intrusion cuts through the ultramafic body. The south and southeast border of this zoned ultramafic complex, informally named the Wrede Creek ultramafic complex, is in direct contact with hornfelsed volcanics (Assessment Report 15194). The Takla rocks strike east-west and dip moderately to the south. These volcanics consist of massive andesitic, augite-rich, coarse pyroclastics and flows passing up into fine-grained tuffs and tuffaceous arenites intercalated with argillite and limestone units (Assessment Report 15194). Near the intrusion, these rocks have been hornfelsed to amphibolites.

Pyrite occurs in fractures and as disseminations within feldspar porphyry. In metavolcanic rocks, trace amounts of molybdenite are found with the pyrite in fractures (Assessment Report 7249). Minor amounts of chalcopyrite and pyrite occur in fractures within the hornblendite unit.

BIBLIOGRAPHY

EMPR ASS RPT *6015, 6452, *7249, 7451, *9510, 15194

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ENERGY AND MINERALS DIVISION

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BIBLIOGRAPHY

EMPR EXPL 1976-E174, 1977-E215, 1978-E243
GSC MEM 251, p. 59
GSC MAP 962A
GSC OF 342
GSC P 76-29
Placer Dome File

DATE CODED: 1992/05/01
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 163**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRAPES, NIK**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 39 34 N
LONGITUDE: 126 07 18 W

NORTHING: 6283181
EASTING: 676417

ELEVATION: 1785 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of the 1977 percussion drill program area (Assessment Report 6452).

COMMODITIES: Copper

Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Pyrite Pyrrhotite

ASSOCIATED: Calcite Epidote

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated

CLASSIFICATION: Hydrothermal Porphyry

TYPE: L05 Porphyry Mo (Low F- type)

L04 Porphyry Cu ± Mo ± Au

D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Upper Triassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY:

Diorite
Volcanic
Meta Volcanic
Ultramafic
Quartz Diorite
Pyroclastic
Flow
Tuff
Tuffaceous Arenite
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Quesnel

METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Hornfels
Amphibolite

CAPSULE GEOLOGY

The Grapes showing is located on the area of the 1977 percussion drill program (Assessment Report 6452), approximately 9 kilometres north of Johanson Lake.

The regional geology is similar to that of the Nik occurrence (094D 109), which lies approximately 1 kilometre to the northwest.

Locally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanic rocks which have been intruded by an ultramafic body. This body is composed of dunite, peridotite, pyroxenite and hornblendite. A quartz diorite intrusion cuts through the ultramafic body. The south and southeast border of this zoned ultramafic complex, informally named the Wrede Creek ultramafic complex, is in direct contact with hornfelsed volcanics (Assessment Report 15194). The Takla rocks strike east-west and dip moderately to the south. These volcanics consist of massive andesitic, augite-rich, coarse pyroclastics and flows passing up into fine-grained tuffs and tuffaceous arenites intercalated with argillite and limestone units (Assessment Report 15194). Near the intrusion, these rocks have been hornfelsed to amphibolites.

Chalcopyrite and pyrite occur in calcite veins within volcanics, with pyrrhotite in epidote veins, with molybdenite as disseminations in diorite and as disseminations in the volcanics (Assessment Report 6452). Molybdenite also occurs with pyrite in quartz veins cutting metavolcanics (Assessment Report 6452).

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BIBLIOGRAPHY

EMPR ASS RPT 6015, *6452, 7249, 7451, *9510, 15194
EMPR EXPL 1976-E174; 1977-E215; 1978-E243
GSC MEM 251, p. 59
GSC MAP 962A
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DATE CODED: 1992/05/01
DATE REVISED: 1992/06/24

CODED BY: DMM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 164**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOHN B**, BLACK DOG, DAR

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D16E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 47 38 N
LONGITUDE: 126 13 45 W
ELEVATION: 1900 Metres

NORTHING: 6297868
EASTING: 669225

LOCATION ACCURACY: Within 1 KM

COMMENTS: Approximate centre of the John B claim, where trenching took place (Assessment Report 21314).

COMMODITIES: Gold Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins
DIMENSION: 170 x 30 Metres STRIKE/DIP: 105 Polymetallic veins Ag-Pb-Zn±Au
COMMENTS: Dimensions of shear zone hosting mineralization. TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian Lay Range Assemblage

LITHOLOGY: Argillite
Chloritic Schist
Quartz Carbonate
Schist
Phyllite
Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Gold 19.5200 Grams per tonne
COMMENTS: Highest assay from all the samples.
REFERENCE: Assessment Report 21314.

CAPSULE GEOLOGY

The John B showing is located 24 kilometres north of Johanson Lake. Mineralization was originally discovered in 1988 and trenching took place in 1991.

The area is underlain by argillite, chloritic schist, quartz carbonate, schist, phyllite and dolomite, of the Pennsylvanian to Permian Lay Range assemblage. The Swannell fault occurs just to the east.

Mineralization occurs in a 30-metre wide by 170-metre long shear zone in greenish grey argillite. Gold, copper, lead and zinc occur in thin quartz veins and gold occurs in quartz-carbonate rock. Pyrite is the only sulphide identified.

A sample taken from Trench #2 assayed 19.52 grams per tonne gold which was the highest assay from all the samples (Assessment Report 21314).

BIBLIOGRAPHY

EMPR ASS RPT *21314
GSC MEM 251
GSC MAP 962A

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DATE CODED: 1992/08/19
DATE REVISED: 1992/08/19

CODED BY: DEJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 165**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOH 4**, JOH, JOH 3-10,
DARB

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 33 25 N
LONGITUDE: 126 08 43 W
ELEVATION: 2050 Metres

NORTHING: 6271717
EASTING: 675445

LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized area near the northwest corner of the Joh 4 claim
(Assessment Report 21782).

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Epidote K-Feldspar
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Diorite
Porphyritic Andesite Flow
Tuff
Porphyritic Hornblende Monzonite
Granite
Granodiorite
Amphibolite

HOSTROCK COMMENTS: The Hogem batholith has recently been redefined as part of the Hogem Intrusive Complex by mapping to the south (Open File 1992-11).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1991

SAMPLE TYPE: Grab

COMMODITY

GRADE

Gold

0.2000

Grams per tonne

Copper

0.1000

Per cent

COMMENTS: Fourteen samples assayed greater than 0.1 per cent copper and fourteen samples assayed greater than 0.2 gram per tonne gold.

REFERENCE: Assessment Report 21782.

CAPSULE GEOLOGY

The Joh 4 occurrence, near the northwest corner of the Joh 4 claim, is about 1.75 kilometres east of Darb Lake. The Joh 3 showing (094D 169) is located 3.4 kilometres to the southwest.

The area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanic rocks. These comprise porphyritic andesite and banded tuff. A porphyritic hornblende monzonite stock of the Early Jurassic Hogem batholith (recently redefined as part of the Mesozoic Hogem Intrusive Complex) intrudes the volcanics, northeast of Johanson Lake. The volcanics are hornfelsed and contain bands of amphibolite, within 300 metres of the intrusive contact. Diorite plugs, locally chloritized and carbonatized, commonly average 3 to 4 per cent disseminated pyrite.

Locally, the area is underlain by porphyritic andesite flows and tuffs intruded by monzonite-diorite stocks and granite-granodiorite

CAPSULE GEOLOGY

of the Hogem batholith.

The showing consists of disseminated chalcopyrite in diorite and in epidote-K-feldspar stringer zones. The mineralization occurs in a diorite-volcanic contact zone.

Fourteen rock samples taken from this showing assayed greater than 0.1 per cent copper and fourteen samples assayed greater than 0.2 gram per tonne gold (Assessment Report 21782).

BIBLIOGRAPHY

EMPR ASS RPT 21781, *21782, 23680, 23842

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GSC OF 342

GSC MEM 251

GSC P 76-29

GSC MAP 962A

V STOCKWATCH Aug.26, 1992; July 28, Sept.9, 1994; Apr.25, 1995;
Aug.29,30, 1996

DATE CODED: 1992/09/25
DATE REVISED: 1996/08/28

CODED BY: DEJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094D 166**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOH 12, JOH, DARB,**
JOH 1-2, JOH 11-12

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 35 30 N
LONGITUDE: 126 07 53 W
ELEVATION: 2200 Metres

NORTHING: 6275616
EASTING: 676137

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized area #1 (sample NR01), at the northeast corner of the
Joh 12 claim (Assessment Report 21781).

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Malachite Chlorite K-Feldspar
ALTERATION TYPE: Oxidation Chloritic Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Altered Monzonite
Porphyritic Hornblende Monzonite
Porphyritic Andesite
Banded Tuff
Amphibolite

HOSTROCK COMMENTS: The Hogem batholith has recently been redefined as part of the Hogem
Intrusive Complex from mapping to the south (Open File 1992-11).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab
COMMODITY GRADE
Gold 0.0470 Grams per tonne
Copper 0.3329 Per cent
COMMENTS: Sample (NR01) across 10 centimetres of malachite filled fractures
hosted in chloritic and potassically altered monzonite.
REFERENCE: Assessment Report 21781.

CAPSULE GEOLOGY

The Joh 12 showing is located east of Johanson Lake, approximately 163 kilometres northeast of Hazelton. The Joh 2 (094D 167) showing is 3.2 kilometres to the south. The area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanic rocks. These comprise porphyritic andesite and banded tuff. A porphyritic hornblende monzonite stock, of the Early Jurassic Hogem batholith, intrudes the volcanics northeast of Johanson Lake. Recent mapping to the south has redefined the Hogem batholith as part Intrusive Complex (Open File 1992-11). The volcanics are hornfelsed a 300 metres of the intrusive contact. Diorite plugs, locally chloritized and carbonatized, commonly average 3 to 4 per cent disseminated pyrite. Mineralization was discovered in 3 main areas on the Joh property. These correspond to large magnetic highs and an intrusive-volcanic contact zone. The mineralization is located in

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CAPSULE GEOLOGY

the northeast corner of the Joh 12 claim. Malachite and minor chalcopyrite occur in fractures in the monzonite. The 2 other areas are the Joh 2 (094D 167) and the Joh 1 (094D 168) showings.

A selected sample, across 10 centimetres of malachite filled fractures, assayed 0.3329 per cent copper and 0.047 gram per tonne gold (Sample NR01, Assessment Report 21781). These fractures occurred in chloritic and potassically altered monzonite.

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EMPR OF 1992-11
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1992/09/25
DATE REVISED: 1992/09/25

CODED BY: DEJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 167**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOH 2, JOH, DARB,**
JOH 1-2, JOH 11-12

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

LATITUDE: 56 33 51 N
LONGITUDE: 126 09 02 W
ELEVATION: 2000 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized area #2 (sample WR05), located in the southern portion of
Joh 2 claim (Assessment Report 21781).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6272507
EASTING: 675088

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Disseminated
CLASSIFICATION: Hydrothermal Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Monzonite Dike
Diorite Dike
Hornblende Diorite
Diorite
Porphyritic Hornblende Monzonite
Porphyritic Andesite
Banded Tuff
Amphibolite

HOSTROCK COMMENTS: The Hogem batholith has recently been redefined as part of the Hogem
Intrusive Complex from mapping to the south (Open File 1992-11).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Chip
COMMODITY GRADE
Gold 0.1500 Grams per tonne
Copper 0.1939 Per cent

COMMENTS: Sample contained disseminated chalcopyrite and fracture-coating
malachite from a monzonite dyke.
REFERENCE: Assessment Report 21781.

CAPSULE GEOLOGY

The Joh 2 showing is located east of Darb Lake, approximately 160 kilometres northeast of Hazelton. The Joh 12 showing (094D 166) is located 3.2 kilometres to the north. The area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanic rocks. These comprise porphyritic andesite and banded tuff. A porphyritic hornblende monzonite stock, of the Early Jurassic Hogem batholith, intrudes the volcanics northeast of Johanson Lake. Recent mapping to the south has redefined the Hogem batholith as part Intrusive Complex (Open File 1992-11). The volcanics are hornfelsed and contain bands of amphibolite within 300 metres of the intrusive contact. Diorite plugs, locally chloritized and carbonatized, commonly average 3 to 4 per cent disseminated

CAPSULE GEOLOGY

pyrite.

Mineralization was discovered in 3 main areas on the Joh property, which correspond to large magnetic highs and an intrusive-volcanic contact zone.

This showing is located in the southern portion of the Joh 2 claim. Here, the contact zone between monzonite and andesite contains mineralized shear zones associated with monzonite-diorite dykes. Disseminated chalcopyrite is also found in hornblende diorite. A 50-centimetre chip sample, containing disseminated chalcopyrite and fracture-coating malachite from a monzonite dyke, assayed 0.1939 per cent copper and 0.150 gram per tonne gold (Sample WR05, Assessment Report 21781).

The 2 other areas are the Joh 12 (094D 166) and the Joh 1 (094D 168) showings.

BIBLIOGRAPHY

EMPR ASS RPT *21781
EMPR OF 1992-11
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1992/09/25
DATE REVISED: 1992/09/25

CODED BY: DEJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 168**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOH 1, JOH, DARB,**
JOH 1-2, JOH 11-12

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 34 05 N
LONGITUDE: 126 12 11 W
ELEVATION: 1850 Metres

NORTHING: 6272807
EASTING: 671845

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized area #3 (sample MR01), near the mid-western border of the Joh 1 claim (Assessment Report 21781).

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Limonite Chlorite Carbonate
ALTERATION TYPE: Oxidation Chloritic Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Porphyritic Andesite
Banded Tuff
Porphyritic Hornblende Monzonite
Amphibolite

HOSTROCK COMMENTS: The Hogem batholith has recently been redefined as part of the Hogem Intrusive Complex from mapping to the south (Open File 1992-11).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Chip
COMMODITY
Gold 4.2000 Grams per tonne
Copper 0.3479 Per cent
COMMENTS: Sample (MR01) across a limonite and malachite-stained quartz vein.
REFERENCE: Assessment Report 21781.

CAPSULE GEOLOGY

The Joh 1 showing is located west of Darb Lake, approximately 157 kilometres northeast of Hazelton. The Joh 2 showing (094D 167) is about 3.2 kilometres to the east. The area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanic rocks. These comprise porphyritic andesite and banded tuff. A porphyritic hornblende monzonite stock of the Early Jurassic Hogem batholith intrudes the volcanics northeast of Johanson Lake. Recent mapping to the south has redefined the Hogem batholith as part of the Hogem Intrusive Complex (Open File 1992-11). The volcanics are hornfelsed and contain bands of amphibolite within 300 metres of the intrusive contact. West of Darb Lake a diorite to monzonite stock, the Darb stock, intrudes the volcanics. Diorite plugs, locally chloritized and carbonatized, commonly average 3 to 4 per cent disseminated pyrite. Mineralization was discovered in 3 main areas on the Joh

CAPSULE GEOLOGY

property, which correspond to large magnetic highs and an intrusive-volcanic contact zone.

The Joh 1 showing is located at a lake near the western border of the Joh 1 claim. This showing consists of a 60-centimetre quartz vein hosted in diorite. A chip sample, across this limonite and malachite-stained quartz vein, assayed 0.3479 per cent copper and 4.2 grams per tonne gold (Sample MR01, Assessment Report 21781).

Copper mineralization is also reported, hosted in volcanic rocks near a diorite intrusion in this area.

A grab sample was taken of hornfelsed volcanic rock from near the northwest corner of the Joh 11 claim. This sample assayed 0.2288 per cent copper, 1.2 grams per tonne gold and 8.3 grams per tonne silver (Assessment Report 21781).

The 2 other areas are the Joh 12 (094D 166) and the Joh 2 (094D 167) showings.

BIBLIOGRAPHY

EMPR ASS RPT *21781
EMPR OF 1992-11
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1992/09/25
DATE REVISED: 1992/09/25

CODED BY: DEJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 169**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOH 3**, JOH, JOH 3-10,
DARB

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 33 03 N
LONGITUDE: 126 11 52 W
ELEVATION: 1900 Metres

NORTHING: 6270904
EASTING: 672248

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized area (sample WR05) near the southern portion of the
Joh 3 claim, west of Darb Creek (Assessment Report 21782).

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Chloritic Diorite
Diorite
Porphyritic Hornblende Monzonite
Monzonite
Granite
Granodiorite
Porphyritic Andesite Flow
Porphyritic Andesite
Banded Tuff
Amphibolite

HOSTROCK COMMENTS: The Hogem batholith has recently been redefined as part of the Hogem
Intrusive Complex by mapping to the south (Open File 1992-11).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Chip
COMMODITY GRADE
Gold 5.9000 Grams per tonne
Copper 0.1338 Per cent

COMMENTS: Sample from the shear zone, over 1 metre.
REFERENCE: Assessment Report 21782.

CAPSULE GEOLOGY

The Joh 3 occurrence is located in the southern portion of the
Joh 3 claim, west of Darb Creek. The Joh 4 showing (094D 165) is
located 3.4 kilometres to the northeast.

The area is underlain by Middle Triassic to Lower Jurassic Takla
Group volcanic rocks. These comprise porphyritic andesite and banded
tuff. A porphyritic hornblende monzonite stock of the Early Jurassic
Hogem batholith intrudes the volcanics, northeast of Johanson Lake.
Recent mapping to the south has redefined the Hogem batholith as part
Intrusive Complex (Open File 1992-11). The volcanics are hornfelsed
and contain bands of amphibolite, within 300 metres of the intrusive

CAPSULE GEOLOGY

contact. West of Darb Lake a diorite to monzonite stock, the Darb stock, intrudes the volcanics. Diorite plugs, locally chloritized and carbonatized, commonly average 3 to 4 per cent disseminated pyrite.

Locally, the area is underlain by porphyritic andesite flows and tuffs intruded by monzonite-diorite stocks and granite-granodiorite of the Hogem batholith.

Disseminated chalcopyrite and pyrite occur in locally chloritic diorite, in a shear zone 3-metres wide and in quartz veins. The quartz veins are 1 to 2 metres thick and 100 metres long. The vertical shear zone trends 150 degrees.

The highest gold assay on the Joh property came from a sample of the shear zone. The chip sample (WR05) assayed 5.9 grams per tonne gold and 0.1338 per cent copper over 1 metre (Assessment Report 21782).

BIBLIOGRAPHY

EMPR ASS RPT *21782
EMPR OF 1992-11
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1992/09/25
DATE REVISED: 1992/09/25

CODED BY: DEJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 170**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOH 9, JOH, JOH 3-10,
DARB, JO 3**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 56 30 58 N
LONGITUDE: 126 06 51 W
ELEVATION: 2050 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6267254
EASTING: 677548

COMMENTS: Mineralized area (sample KR08) near the southwest corner of the Joh 9 claim (Assessment Report 21782).

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Triassic-Jurassic
Lower Jurassic

GROUP

Takla

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Hogem Intrusive Complex

LITHOLOGY: Porphyritic Andesite Flow
Porphyritic Andesite
Banded Tuff
Amphibolite
Porphyritic Hornblende Monzonite
Monzonite
Diorite
Granite
Granodiorite

HOSTROCK COMMENTS: The Hogem batholith has recently been redefined as part of the Hogem Intrusive Complex by mapping to the south (Open File 1992-11).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1991

COMMODITY

GRADE

Gold

1.1000

Grams per tonne

Copper

0.0160

Per cent

COMMENTS: Sample from quartz vein, across 64 centimetres.
REFERENCE: Assessment Report 21782.

CAPSULE GEOLOGY

The Joh 9 occurrence is located near the southeast corner of the Joh 9 claim, about 4.5 kilometres southeast of the Joh 3 showing (094D 169).

The area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanic rocks. These comprise porphyritic andesite and banded tuff. A porphyritic hornblende monzonite stock of the Early Jurassic Hogem batholith intrudes the volcanics, northeast of Johanson Lake. Recent mapping to the south has redefined the Hogem batholith as part of the Hogem Intrusive Complex (Open File 1992-11). The volcanics are hornfelsed and contain bands of amphibolite within 300 metres of the intrusive contact. Diorite plugs, locally chloritized and carbonatized, commonly average 3 to 4 per cent disseminated pyrite.

Locally, the area is underlain by porphyritic andesite flows and

CAPSULE GEOLOGY

tuffs intruded by monzonite-diorite stocks and granite-granodiorite of the Hogem batholith.

Mineralization consists of disseminated pyrite in a rusty, milky quartz vein. The vein is hosted in a shear zone which trends 64 degrees and dips 80 degrees west.

A chip sample, from this quartz vein, assayed 1.1 grams per tonne gold and 0.016 per cent copper, across 64 centimetres (Assessment Report 21782).

BIBLIOGRAPHY

EMPR ASS RPT 21502, *21782
EMPR OF 1992-11
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1992/09/25
DATE REVISED: 1992/09/25

CODED BY: DEJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 576
REPORT: RGEN0100

CAPSULE GEOLOGY

167) and the Joh 1 (094D 168) showings.
A grab sample was taken of hornfelsed volcanic rock from near the northwest corner of the Joh 11 claim. This sample assayed 0.2288 per cent copper, 1.2 grams per tonne gold and 8.3 grams per tonne silver (Assessment Report 21781).

BIBLIOGRAPHY

EMPR ASS RPT *21781
EMPR OF 1992-11
GSC OF 342
GSC MEM 251
GSC P 76-29
GSC MAP 962A

DATE CODED: 1992/09/25
DATE REVISED: 1992/09/25

CODED BY: DEJ
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 172**

NATIONAL MINERAL INVENTORY:

NAME(S): **CARRUTHERS PASS**, RUT, CAR

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D08W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 22 00 N
LONGITUDE: 126 18 00 W
ELEVATION: 1800 Metres

NORTHING: 6250162
EASTING: 666771

LOCATION ACCURACY: Within 1 KM
COMMENTS: Centre of Rut claim.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrrhotite Chalcopyrite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Volcanogenic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Dewar	
Permian	Asitka	Unnamed/Unknown Formation	
Upper Triassic			Unnamed/Unknown Informal

LITHOLOGY: Shale
Argillite
Andesite
Chert
Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Pyrrhotite and chalcopyrite occur in sediments of the Upper Triassic Takla Group, Dewar Formation. Host rocks are (tuffaceous?) graphitic mudstones, siltstones and fine-grained sandstones.

In 1998, Phelps Dodge Corporation of Canada Ltd. conducted geochemical and geological surveys on the Car and Rut claims.

In 2000, Phelps Dodge completed a 6-hole, 950-metre diamond drill program on this VMS property near Johanson Lake. Drilling targeted the projection of a narrow polymetallic horizon, that was exposed in cliffs near the ridge crest (Lane, personal communication, 2000).

BIBLIOGRAPHY

EM EXPL 2000-9-23
EMPR ASS RPT 25445, 25444, 25802
EMPR OF 1994-14

DATE CODED: 1999/06/17
DATE REVISED: 2000/08/29

CODED BY: LDJ
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094D 173**

NATIONAL MINERAL INVENTORY:

NAME(S): **VERNA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D10E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 43 56 N
LONGITUDE: 126 33 28 W
ELEVATION: 1920 Metres

NORTHING: 6290250
EASTING: 649400

LOCATION ACCURACY: Within 500M

COMMENTS: Found by BC Geological Survey mapping crew during 1997 field season (Fieldwork 1997).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Epigenetic Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Volcanic
Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY

YEAR: 1997

Copper

GRADE

5.0000

Per cent

REFERENCE: Open File 2001-2.

CAPSULE GEOLOGY

The Verna showing is located 700 metres northeast of the Menard Pass showing (094D049).

The regional and local geology is similar to that of the Marmot occurrence (094D 005), located approximately 6 kilometres to the northwest.

The area is underlain by Upper Triassic Savage Mountain Formation (Takla Group) volcanics. These are bounded by the Moose Valley fault to the west and by the north-northwest trending Ingenika fault to the east. An Early Jurassic quartz monzodiorite stock lies just to the north of the occurrence.

A quartz fissure vein occurs at the location trending 285 degrees with vertical dip. It is up to a metre wide (usually less) and contains bands of quartz with cockscomb quartz rimming fragments and wallrock. The fissure vein is on the ridgetop. Within a hundred metres just off the ridge is an oval epidote zone of greenish rock with slickensides (epidote metadomain), about 10 by 3 metres in dimension. It displays abundant malachite staining. A composite chip sample from this zone returned 50077 parts per million (5%) copper.

BIBLIOGRAPHY

EM OF 2001-2
EM FIELDWORK *1997, pp. 8b1 to 8b-10: 2000, pp. 75-82
GSC MEM 251
GSC OF 342

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 579
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 76-29
Monger, J. W. H. (1984); Cordilleran Tectonics: A Canadian
Perspective, Geol. Soc. France Bull., Ser. 7, v. 26, no. 2, p.
255-278

DATE CODED: 1991/08/01
DATE REVISED: 2001/07/06

CODED BY: DMM
REVISED BY: ASL

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094D 174**

NATIONAL MINERAL INVENTORY:

NAME(S): **KIM**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W 094D16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 44 29 N
LONGITUDE: 126 29 48 W
ELEVATION: 1930 Metres

NORTHING: 6291395
EASTING: 653099

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a north flowing tributary of Menard Creek. Found in 1997 by BC Geological Survey mapping crew (Fieldwork 1997; Open File 2001-2).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Carbonate
ALTERATION: Pyrite Serpentine Chlorite Silica
ALTERATION TYPE: Pyrite Propylitic Serpentin'zn Chloritic Silicific'n
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Shear Disseminated
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Granodiorite
Aphanitic Andesite
Porphyritic Andesite
Altered Andesite
Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1997

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

3.4000

Per cent

REFERENCE: Open File 2001-2.

CAPSULE GEOLOGY

The area of the Kim showing is cut by a north trending fault that separates andesitic rocks of the Upper Triassic Savage Mountain Formation (Takla Group), to the west, from an undifferentiated package of Upper Triassic volcanics (Takla Group), to the east. Both volcanic packages are represented by aphanitic to porphyritic (feldspar) andesites (Assessment Report 4707). The undifferentiated volcanics are cut by a medium-grained gabbro with phenocrysts of plagioclase feldspar and pyroxene (Assessment Report 4707).

The Savage Mountain volcanics are cut by northwest trending dykes of pink porphyritic granodiorite that contain hornblende and plagioclase phenocrysts in a matrix of quartz, plagioclase and orthoclase (Assessment Report 4707). Close to the north trending fault, which the dykes terminate against, the matrix is chlorite altered. A 60-metre pyritic and propylitic envelope exists on either side of the fault (Assessment Report 4707). A serpentinite altered zone is developed around the gabbro intrusion and is more pervasive near the fault. Serpentinization overlaps on both sides of the fault and is fairly widespread near the basic intrusion.

The Kim showing is found 400 metres south of the Ard showing (094D 090) along the same fault structure. The showing appears to be

CAPSULE GEOLOGY

immediately south of the pinch-out of gabbro against the fault (Open File 2001). Pyrite and chalcopyrite are found as selvages within foliation of chloritised and propylitised volcanics. Thin carbonate veinlets also occur as selvages within the foliation. South of here (about 150 metres), a granitic body terminates against the fault. Here there is a gossan with silica and pyritic alteration of the intrusive at the fault. A grab sample yielded 3.4 per cent copper (Open File 2001-2).

BIBLIOGRAPHY

EMPR ASS RPT 4707
EM OF *2001-2
EM FIELDWORK *1997, pp. 8b1 to 8b-10: 2000, pp. 75-82
GSC MEM 251
GSC OF 342
GSC P 76-29
Monger, J. W. H. (1984); Cordilleran Tectonics: A Canadian Perspective, Geol. Soc. France Bull., Ser. 7, v. 26, no. 2, p. 255-278

DATE CODED: 1985/07/24
DATE REVISED: 2001/07/06

CODED BY: GSB
REVISED BY: ASL

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094D 175**

NATIONAL MINERAL INVENTORY:

NAME(S): **GARRY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094D09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 56 44 26 N
LONGITUDE: 126 28 01 W
ELEVATION: 1620 Metres

NORTHING: 6291360
EASTING: 654930

LOCATION ACCURACY: Within 500M

COMMENTS: Located on a ridge south of Menard Creek and west of the Ingenika River. Located in 1997 by BC Geological Survey mapping Crew (Fieldwork 1997; Open File 2001-2).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite Azurite
ALTERATION: Epidote Carbonate Hematite
ALTERATION TYPE: Epidote Oxidation Carbonate
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I VEIN, BRECCIA AND STOCKWORK

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Unknown

GROUP

Takla

FORMATION

Savage Mountain

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY:

Basalt
Porphyritic Andesite
Lithic Tuff Breccia
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1997

COMMODITY

Copper

GRADE

0.3500 Per cent

REFERENCE: Open File 2001-2.

CAPSULE GEOLOGY

The Garry occurrence is located on a ridge south of Menard Creek and west of the Ingenika River. The regional and local geology is similar to that of the Ard occurrence (094D 090).

Basaltic Savage Mountain Formation volcanics (Takla Group) are cut by northwest trending, pink porphyritic granodiorite dykes.

A shear zone in altered reddish-green basalt trends 120 degrees across the ridge crest. Alteration in the zone includes development of epidote, carbonate and hematite. Mineralization is most evident in several square metres of malachite and azurite-stained rubble. The showing, typical of other minor showings in the area, is notable because it is adjacent to a pyrite-silica gossan about 5 metres wide, with the same general trend. Rocks to the north of the showing are mapped as reddish, weakly porphyritic, epidotised basalt; to the south there are grey andesitic lath porphyries and minor lithic tuff breccia. A grab sample of stained material assayed 0.35% copper (Open File 2001-2).

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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 583
REPORT: RGEN0100

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DATE CODED: 1985/07/24
DATE REVISED: 2000/11/30

CODED BY: GSB
REVISED BY: ASL

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094E 001**

NATIONAL MINERAL INVENTORY: 094E6 Au1

NAME(S): **MCCLAIR CREEK, TWO BROTHERS CREEK, THUDEGADE CREEK, MCLAREN CREEK, MOOSEHORN CREEK, TOODOGGONE RIVER, APEX, PRAIRIE BELL, BUTTERFLY, PEGWIN, PL 6422-6449, PL 6030-6035, PL 6040**

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

Open Pit

MINING DIVISION: Omineca

LATITUDE: 57 23 30 N
LONGITUDE: 127 03 51 W
ELEVATION: 1165 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6362642
EASTING: 616350

LOCATION ACCURACY: Within 500M

COMMENTS: The location of pits 1 and 19 to 25 inclusive on McClair Creek, 1 kilometre upstream from the junction of McClair Creek with the Toodoggone River (Assessment Report 10534).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Quaternary	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Alluvium

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Spatsizi Plateau

RELATIONSHIP: Pre-mineralization

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

CAPSULE GEOLOGY

Placer gold was first discovered by Charles McClair (McLaren) in the Two Brothers Valley (now the Toodoggone River Valley). Between 1925 and 1926, McClair mined about 1148 cubic metres of gravel from lower McClair Creek. Reports vary on the amount of placer gold recovered by McClair (from 4354 to 31,103 grams). McClair and a partner disappeared while working in the region in 1927. Subsequent work on McClair Creek was done by Thomas after discovering McClair's cabin and workings. Thomas staked and prospected a number of placer claims on McClair Creek in 1932; upon his return to Edmonton in the same year, he died.

Mr. Thomas got an Edmonton syndicate interested in the property before his death, and in the following year a party of men were dispatched and reportedly discovered gold in McClair Creek and the Toodoggone River. Over 1000 pans of gravel were panned along 19 kilometres of the Toodoggone River. In addition, 26 bulk samples of 0.7 cubic metre of gravel each, were sluiced at various points from the bench adjacent to the Toodoggone River. An undisclosed amount of churn-drill holes were drilled at the mouth of McClair Creek. Based on these favorable results the Two Brothers Valley Gold Mines Limited was formed, but was unable to raise sufficient capital during the depression years for further work and development. Holland, of the British Columbia Department of Mines, reported a total of 3265 grams of placer gold production from McClair Creek during the period 1931 to 1935 (Bulletin 28).

In 1961, Northern Alluvial Development Ltd. tested the delta of McClair Creek with 15 churn-drill holes. Results of the program indicated that the gravels were gold bearing in the upper 3.6 to 9.7 metres, but of low grade.

In 1981, the ground was staked by various groups, including Tarmik Placer Resources Ltd. Work by Tarmik consisted of 2902 kilograms of material removed and panned off-site and an additional

CAPSULE GEOLOGY

150 pans being panned on-site, 10 Winky Vibracore drillholes for a total of 44 metres, and 20 hand pits for a total of 4.4 vertical linear metres, in addition to 4000 hectares of surficial mapping and assays of 88 samples.

A careful study of the surficial geology of the area in 1981 determined that the gold is of glacial origin, while there appears to be little chance of locating ancient channels or true bedrock sources. The gold found to date is normally fine but also occurs as nuggets, and is near surface as a concentration from glacial drift which, for the most part, is local in origin. Gold content appears to increase with depth. Rock benches on McClair Creek are bare in places, while in others they are covered with glacial drift to depths in excess of 4.5 metres.

Results indicated that a least one placer deposit is estimated to contain 536,004 cubic metres of potentially economic gravels of an assumed thickness of 3 metres. The best results were from the mouth of McClair Creek. The interval between 1.6 and 2.4 metres depth, from pit 19, yielded a weighted average of 508.8 milligrams gold per cubic metre from panned coarse gravels, and between 0.6 to 3 metres depth, a weighted average of 168.9 milligrams per cubic metre from panned gravels and 747.7 milligrams per cubic metre from sluicing (Assessment Report 10534). Pit 1, also at the mouth of McClair Creek, yielded an average weighted value of 1058 milligrams per cubic metre over the 1.6 to 2.4 metre depth interval (Assessment Report 10534). Pit 5 yielded an average weighted value of 243 milligrams per cubic metre over a 2.4-metre interval (Assessment Report 10534). A more complete summary of results from dug pits is found in Assessment Report 10534.

Further work conducted in 1983 on these placer leases included 7 pits for an aggregate depth of 14.2 metres, and minor prospecting. The purpose of the pits was to better define the bedrock characteristics and concentration of gold by strata, and mineable volumes. High flood waters hampered work.

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GCNL (Oct.17), 1977; #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/02

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 002**

NATIONAL MINERAL INVENTORY: 094E2 Ag1

NAME(S): **FIRESTEEL**, FIRE 1-10, BRULE 3-4,
UBBLE 7-11, CHANCE GP., CALCINE,
BREN

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094E02W

MINING DIVISION: Omineca

BC MAP:
LATITUDE: 57 05 09 N

UTM ZONE: 09 (NAD 83)

LONGITUDE: 126 55 03 W

NORTHING: 6328868

ELEVATION: 1260 Metres

EASTING: 626206

LOCATION ACCURACY: Within 500M

COMMENTS: A circular deposit of cemented breccia, 45 metres in diameter by 4 metres thick, hosting sphalerite, chalcopyrite and galena in a zinc-rich matrix, located approximately 4.9 kilometres north-northwest of the northern end of Thutade Lake, south of the Firesteel River (Assessment Report 4200).

COMMODITIES: Silver Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Freibergite Argentite
Tetrahedrite

COMMENTS: Freibergite, argentite and tetrahedrite occur in quartz veins to the south of the main zone.

ASSOCIATED: Carbonate Pyrite Quartz

ALTERATION: Silica

ALTERATION TYPE: Skarn

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Podiform Massive Vein
CLASSIFICATION: Replacement Skarn Epigenetic

TYPE: K02 Pb-Zn skarn

SHAPE: Regular

DIMENSION: 45 x 4 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: A circular deposit of mineralized, cemented breccia.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Upper Triassic
Permian

GROUP

Takla
Asitka

FORMATION

Unnamed/Unknown Formation
Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Fossiliferous Limestone
Limestone Breccia
Greywacke
Chert
Volcaniclastic Conglomerate
Mafic Tuff
Lapilli Tuff
Plagioclase Porphyry Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

Contact

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: MAIN

REPORT ON: Y

CATEGORY: Unclassified
QUANTITY: 33060 Tonnes

YEAR: 1973

COMMODITY

GRADE

Silver	34.2900	Grams per tonne
Copper	0.3000	Per cent
Zinc	10.0000	Per cent

COMMENTS: Source of quantity of ore reserves is unknown.

REFERENCE: Assessment Reports 4200 (reserves); 14118 (grades).

CAPSULE GEOLOGY

The Firesteel developed prospect is located approximately 13.2

CAPSULE GEOLOGY

kilometres north-northwest of the Kemess South occurrence (094E 094) and 4.9 kilometres north-northwest of the northern end of Thutade Lake, south of the Firesteel River. The occurrence lies on the eastern edge of the Spatsizi Plateau at the southern end of the Toodoggone gold camp, some 270 kilometres north of Smithers. The Firesteel developed prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Firesteel developed prospect is underlain by pale grey, massive, recrystallized fossiliferous limestone of the Asitka Group and mafic volcanics of the Takla Group. Dark green mafic tuffs, lapilli tuffs and plagioclase porphyry flows comprise mafic volcanics. Greywacke, chert and volcanoclastic conglomerate are associated with the volcanics.

Mineralization consists of low-grade skarn and breccia replacement-type mineralization developed at the volcanic-limestone contact. Limestone in the area contains minor amounts of galena, sphalerite, chalcopryrite and pyrite.

The main zone of mineralization consists of sphalerite, chalcopryrite and galena clasts or nodules in a sphalerite-carbonate matrix forming an apparently circular deposit of cemented breccia. It is estimated to be 45.7 metres in diameter by 4.5 metres thick and to contain 33,060 tonnes (Assessment Report 4200) grading approximately 34.29 grams per tonne silver, 0.30 per cent copper and 10 per cent zinc (Assessment Report 14118).

To the west, trenching has intersected 22.86 centimetres of massive galena with a little sphalerite, pyrite and chalcopryrite in a steep zone in limestone. The zone consists of quartz veins paralleling bedding in limestone (siliceous zones along tuffaceous horizons in limestone and fissure veins). Exposures lie along both sides of a north-trending limestone ridge, immediately west of Bren Creek.

Freibergite-bearing quartz veins occur to the south of the main zone. Values up to 11,163 grams per tonne silver over 0.46 metre and 1134 grams per tonne silver over 1.2 metres have been reported (Assessment Report 13531). Mineralization was considered too erratic to be economic.

Further south, silver-lead-zinc mineralization occurs in quartz veins along the limestone bedding. Veins widths vary from 5 to 121 centimetres and in places show varying amounts of argentite, tetrahedrite, sphalerite and galena. A total of 11 holes were drilled in 1957. The best results were from drillhole G-6 over a 9.1-centimetre interval which assayed 349.7 grams per tonne silver and 6.86 grams per tonne gold (Assessment Report 4200).

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area, Oct. 1964, Canadian Superior Exploration Limited-in 94E
General File)

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 588
REPORT: RGEN0100

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IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August 1986
N MINER October 13, 1986
N MINER MAG p. 1, March 1988
W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1992/01/09

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 003**

NATIONAL MINERAL INVENTORY: 094E2 Cu2

NAME(S): **RIGA 19**, RIGA, RN,
DRY 17-20, ACA, PUL,
CO, SUN, STAR,
ACAPULCO GROUP

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 12 13 N
LONGITUDE: 126 55 12 W
ELEVATION: 2050 Metres

NORTHING: 6341969
EASTING: 625653

LOCATION ACCURACY: Within 500M

COMMENTS: A pit has exposed a high-grade vein, 5.4 metres long by 2.1 metres wide, containing chalcopyrite in a chloritic matrix, located immediately northwest of Drybrough Peak, some 280 kilometres north of Smithers (Assessment Report 1802).

COMMODITIES: Copper Molybdenum Silver

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Bornite
ASSOCIATED: Chlorite Sericite Quartz Magnetite Pyrite
Epidote Carbonate
ALTERATION: Chlorite Sericite Epidote Quartz Carbonate
Malachite
ALTERATION TYPE: Chloritic Propylitic Oxidation Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Porphyry Epigenetic Hydrothermal
DIMENSION: 5 x 2 Metres STRIKE/DIP: 090/27S TREND/PLUNGE:
COMMENTS: A pit 9.1 metres in diameter has exposed a quartz vein for 5.4 metres strike length and 2.1 metres width in a zone of mineralization 152.4 by 106.7 metres (Assessment Report 1802).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Andesite
Andesite Porphyry Flow
Andesite Tuff
Hornblende Syenite
Hornblende Monzonite
Biotite Hornblende Syenite
Biotite Hornblende Monzonite
Limestone
Dike
Andesite Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist Zeolite
COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1968

COMMODITY	GRADE	
Copper	5.7500	Per cent
Molybdenum	0.0100	Per cent

COMMENTS: Sample taken from the pit exposing the main vein. Sample 28-9 taken in 1973 yielded 12.34 grams per tonne silver.
REFERENCE: Assessment Report 1802.

CAPSULE GEOLOGY

The Riga 19 prospect is located immediately northwest of Drybrough Peak, some 280 kilometres north of Smithers. The Riga 19 prospect lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Riga 19 prospect is underlain by Takla Group flows and pyroclastics consisting of purple and green andesite and andesite porphyry and tuff. Fracturing and chloritization is widespread. Magnetite is strong except in areas of strong pyrite alteration. Hornblende and biotite hornblende syenite to monzonite of the Early Jurassic Black Lake stock comprise intrusive rocks underlying the Riga 19 prospect. Small dikes of the intrusion cut the Takla Group volcanics. The intrusion and the volcanics are rich in magnetite and locally pyrite. The formation of gossans by weathering are common. Chlorite-sericite is associated with mineralized fractures. Minor outcrops of Asitka Group limestone are exposed along the banks of Drybrough Creek to the north.

Mineralization covers an areal extent of 152 by 106 metres. It consists of a high-grade vein surrounded by relatively low-grade fracture fillings. A pit, approximately 9.1 metres in diameter, exposes the vein. A fault truncates the vein on the west side of the pit. The vein is exposed over 5.4 metres strike length and 2.1 metres maximum width in the pit. The vein consists of chalcopyrite in a chloritic matrix. Epidote, malachite and chalcopyrite extend into the hangingwall approximately 1.5 metres. Most of the surrounding mineralization occurs in fractures striking 090 degrees and dipping 20 to 35 degrees south. The fractures are 1.2 to 5.0 centimetres wide and 0.6 to 1.2 metres apart and contain quartz, epidote, chalcopyrite, and lesser bornite and molybdenite. Secondary carbonates are contained in the fractured andesite hostrocks between veins.

Assay values from samples taken from the pit in 1968 ranged up to 5.7 per cent copper and 0.01 per cent molybdenum (Assessment Report 1802). Grab sample 28-9 taken of this mineralization in 1973 assayed 0.58 per cent copper and 12.34 grams per tonne silver (Assessment Report 4870).

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/20

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 004**

NATIONAL MINERAL INVENTORY: 094E2 Cu2

NAME(S): **RIGA 15**, RIGA, RN,
DRY 17-20, ACA, PUL,
CO, SUN, STAR,
ACAPULCO GROUP

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6342196
EASTING: 624991

LATITUDE: 57 12 21 N
LONGITUDE: 126 55 51 W
ELEVATION: 1850 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: A pit has exposed chalcopyrite and molybdenite hosted in the syenite to monzonite Black Lake stock and adjacent volcanics, located immediately northwest of Drybrough Peak, some 280 kilometres north of Smithers (Assessment Report 1802).

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT:	Chalcopyrite	Molybdenite			
ASSOCIATED:	Chlorite	Sericite	Pyrite	Magnetite	Hematite
ALTERATION:	Chlorite	Sericite	Hematite		
ALTERATION TYPE:	Chloritic	Sericitic		Hematite	
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER:	Vein	Stockwork	Disseminated
CLASSIFICATION:	Porphyry	Epigenetic	Hydrothermal
DIMENSION:	76 x 46	Metres	STRIKE/DIP:
COMMENTS:	Mineralized area of disseminations and fracture fillings.		

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Hornblende Syenite
Hornblende Monzonite
Biotite Hornblende Syenite
Biotite Hornblende Monzonite
Andesite
Andesite Porphyry
Andesite Tuff
Limestone
Dike

GEOLOGICAL SETTING

TECTONIC BELT:	Intermontane	PHYSIOGRAPHIC AREA:	Omineca Mountains
TERRANE:	Stikine		
METAMORPHIC TYPE:	Regional Contact	RELATIONSHIP:	GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1968
SAMPLE TYPE:	Chip		
COMMODITY		GRADE	
Copper		1.3000	Per cent
Molybdenum		0.0100	Per cent
COMMENTS:	Chip sample over 1.22 metres from the eastern side of the pit.		
REFERENCE:	Assessment Report 1802.		

CAPSULE GEOLOGY

The Riga 15 showing is located immediately northwest of Drybrough Peak, some 280 kilometres north of Smithers. The Riga 15 showing lies within the Omineca-Cassiar mountains at the southern end

CAPSULE GEOLOGY

of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Riga 15 showing is underlain by Takla Group flows and pyroclastics consisting of purple and green andesite and andesite porphyry and tuff. Fracturing and chloritization is widespread. Magnetite is strong except in areas of strong pyrite alteration. Hornblende and biotite hornblende syenite to monzonite of the Early Jurassic Black Lake stock comprise intrusive rocks underlying the showing. Small dikes of the intrusive cut the Takla Group volcanics. The intrusion and the volcanics are rich in magnetite and locally pyrite. The formation of gossans by weathering are common. Chlorite-sericite is associated with mineralized fractures. Minor outcrops of Asitka Group limestone are exposed along the banks of Drybrough Creek to the north.

Mineralization at the showing consists of disseminations and fracture fillings of chalcopyrite and pyrite and blebs of molybdenite in the intrusion, over an area 76.2 metres long by 45.72 metres wide, and is associated with fractures in the volcanics. Chlorite, sericite and hematite alteration are associated with mineralization near fracture zones.

A pit, approximately 6.1 metres in diameter, was dug at the showing in 1968. A chip sample was taken over 1.2 metres width in the eastern part of the pit. Assay results were 1.3 per cent copper and 0.01 per cent molybdenum (Assessment Report 1802). A random bulk sample from the west side of the pit assayed 0.18 per cent copper and 0.01 per cent molybdenum (Assessment Report 1802).

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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/21

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 005**

NATIONAL MINERAL INVENTORY: 094E2 Cu2

NAME(S): **RIGA 24**, RIGA, RN,
DRY 17-20, ACA, PUL,
CO, SUN, STAR,
ACAPULCO GROUP

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 12 13 N
LONGITUDE: 126 54 49 W
ELEVATION: 1860 Metres

NORTHING: 6341981
EASTING: 626039

LOCATION ACCURACY: Within 500M

COMMENTS: A quartz vein with chalcopyrite is hosted in Takla Group volcanics,
350 metres east of Drybrough Peak, some 280 kilometres north of
Smithers (Assessment Report 9309).

COMMODITIES: Silver Gold Copper Lead Zinc

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite Sericite Magnetite Pyrite
ALTERATION TYPE: Chloritic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Andesite
Andesite Porphyry
Andesite Tuff
Hornblende Syenite
Hornblende Monzonite
Biotite Hornblende Syenite
Biotite Hornblende Monzonite
Limestone
Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Grab
COMMODITY GRADE

Silver	144.0000	Grams per tonne
Gold	1.6800	Grams per tonne
Copper	0.1720	Per cent
Lead	0.3500	Per cent
Zinc	0.2200	Per cent

COMMENTS: Sample SC-27-80-7. Sample SC-20-87-9, taken from a vein less than 100 metres away, assayed 1.482 per cent copper.

REFERENCE: Assessment Report 9309.

CAPSULE GEOLOGY

The Riga 24 showing is located 350 metres east of Drybrough Peak, some 280 kilometres north of Smithers. The Riga 24 showing

CAPSULE GEOLOGY

lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Riga 24 showing is underlain by Takla Group flows and pyroclastics consisting of purple and green andesite and andesite porphyry and tuff. Fracturing and chloritization is widespread. Magnetite is strong except in areas of strong pyrite alteration. Hornblende and biotite hornblende syenite to monzonite of the Early Jurassic Black Lake stock comprise intrusive rocks underlying the showing. Small dikes of the intrusion cut the Takla Group volcanics. The intrusion and the volcanics are rich in magnetite and locally pyrite. The formation of gossans by weathering are common. Chlorite-sericite is associated with mineralized fractures. Minor outcrops of Asitka Group limestone are exposed along the banks of Drybrough Creek to the north.

Mineralization at the showing consists of a quartz vein with chalcocopyrite which was sampled during property work done in 1980. Assay results from sample SC-27-80-7 were 144.0 grams per tonne silver, 1.68 grams per tonne gold, 0.35 per cent lead, 0.22 per cent zinc and 0.172 per cent copper (Assessment Report 9309). A second vein approximately 100 metres away was also sampled. Sample SC-27-80-9 from this second vein analysed 71.7 grams per tonne silver, 0.34 gram per tonne gold, 1.482 per cent copper, 0.76 per cent zinc and 0.36 per cent lead (Assessment Report 9309).

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MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/21

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 006**

NATIONAL MINERAL INVENTORY: 094E7 Cu1

NAME(S): **GARNET**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 27 04 N
LONGITUDE: 126 55 58 W
ELEVATION: 1740 Metres

NORTHING: 6369490
EASTING: 624045

LOCATION ACCURACY: Within 500M

COMMENTS: The Garnet showing, composed of finely disseminated bornite in a fine-grained feldspar porphyry over a 4.58 metres width, is located 4.75 kilometres north of Toodoggone Lake and west of Jack Lee Creek (Assessment Report 1805). The showing is located in the south-central part of the Toodoggone gold camp, roughly 280 kilometres north of Smithers.

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Bornite
ALTERATION: Epidote Serpentine Calcite
COMMENTS: Calcite occurs as criss-crossing veinlets.
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
DIMENSION: 5 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Disseminated bornite is found over a 4.58 metres wide interval and extends vertically (Assessment Report 1805).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Black Lake Suite
Lower Jurassic			

LITHOLOGY: Feldspar Porphyry
Andesite
Basalt
Rhyolite Dike
Hornblende Monzonite
Lapilli Tuff
Pyroclastic Breccia
Porphyritic Andesite
Basalt Lava Flow
Volcanic Conglomerate

HOSTROCK COMMENTS: The Toodoggone Formation is undivided on a regional scale at this location (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite
COMMENTS: Located in the south-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1969
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 9.9300 Grams per tonne
Copper 0.4200 Per cent
REFERENCE: Assessment Report 1805.

CAPSULE GEOLOGY

The Garnet showing, composed of finely disseminated bornite in a fine-grained feldspar porphyry over a 4.58 metres width, is located 4.75 kilometres north of Toodoggone Lake and west of Jack Lee Creek. The showing is located in the south-central part of the Toodoggone

CAPSULE GEOLOGY

gold camp, roughly 280 kilometres north of Smithers.

The Garnet showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Garnet showing is hosted in feldspar porphyry. On a regional scale, the Toodoggone Formation at this location is undifferentiated and described as well-bedded lapilli tuff and pyroclastic breccia, porphyritic andesite, subordinate basalt lava flows, volcanic conglomerate, siltstone and mudstone (Bulletin 86).

On a local (property) scale other rock types evident in the vicinity are fine grained, dense, dark grey to purple andesite or basalt, fine grained, dense, siliceous rhyolite (usually found as dikes), and medium to coarse-grained hornblende monzonite. Generally the rocks are well fractured and variously altered. Fractures are commonly filled with epidote, serpentine and criss-crossing calcite veinlets. Faults are prominently exposed in cliff walls and along ridges. Two main fault systems and associated fractured rock trend northeast and northwest with near vertical dips (Assessment Report 1805).

A selected grab sample from the Garnet 12 claim contained finely disseminated bornite hosted in fine-grained feldspar porphyry over a 4.58 metres width and extending vertically. The sample analysed 0.42 per cent copper and 9.93 grams per tonne silver (Assessment Report

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MINFILE NUMBER: **094E 007**

NATIONAL MINERAL INVENTORY: 094E6 Cu2

NAME(S): **SPARTAN**, NE, NE 1-24,
NE 26-49, NE 51, NE 59-61,
NE 99-106, GO, GO 90-100 (EVEN),
GO 102-114, RI, RI 101-103

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 21 59 N
LONGITUDE: 127 00 38 W
ELEVATION: 1460 Metres

NORTHING: 6359922
EASTING: 619654

LOCATION ACCURACY: Within 500M

COMMENTS: The location of malachite staining on finely fractured syenite, traced in trenching for roughly 61 metres, on the steep north slope of the former Spartan 13 claim, 4.8 kilometres southwest of Toodoggone Lake (Assessment Report 1823). Smithers is 290 kilometres to the south.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Disseminated chalcopyrite was observed in a trench (Assessment Report 1823).

ASSOCIATED: Pyrite
ALTERATION: Silica Pyrite Malachite

COMMENTS: Malachite staining is present over a surface area of 92 by 81 metres on the Spartan showing (Assessment Report 1823).

ALTERATION TYPE: Silicific'n Pyrite Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

DIMENSION: 92 x 61 Metres STRIKE/DIP:

COMMENTS: The Spartan showing consists of malachite staining on surface over an area of 92 by 61 metres, and disseminated chalcopyrite exposed by trenching over roughly 61 metres (Assessment Report 1823).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE: Lower Jurassic
GROUP: Hazelton

FORMATION: Toodoggone

IGNEOUS/METAMORPHIC/OTHER

ISOTOPIC AGE: 197 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite
Jurassic

Unnamed/Unknown Informal

LITHOLOGY: Syenite
Trachyte
Monzonite
Andesite Dike
Feldspar Porphyry Dike
Trachyandesite Flow
Lapilli Tuff
Lahar
Volcanic Sandstone
Conglomerate

HOSTROCK COMMENTS: The date is for the Metsantan Member of the Toodoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY

YEAR: 1967

	GRADE	
Copper	0.2300	Per cent
Molybdenum	0.0100	Per cent

REFERENCE: Assessment Report 1823.

CAPSULE GEOLOGY

The Spartan showing consists of an altered fracture zone in syenite over a surface area covering 92 by 61 metres and exposed for roughly 61 metres by trenching (Assessment Report 1823). The showing is on a steep north slope of the former Spartan 19 claim, 4.8 kilometres southwest of Toodoggone Lake, and 290 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Spartan showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Spartan showing lies immediately west of a contact between an Early to Middle Jurassic syenite to monzonite stock and volcanics of the Metsantan Member of the Toodoggone Formation. Lithologies described in the area of the Spartan showing are syenite, trachyte, monzonite, and andesite and feldspar porphyry dikes (Assessment Report 1823). At the showing proper, andesite is fine grained, greyish white, pyritiferous, siliceous with minor chalcopryrite. The Metsantan Member is described as trachyandesite flows with lenses of lapilli tuff and lahar; minor volcanic sandstone and conglomerate (Bulletin 86).

Mineralization at the Spartan showing consists of disseminated chalcopryrite (up to 1 per cent) and associated malachite staining on surface, hosted in finely fractured syenite and andesite, covering an area 92 by 61 metres. The strong zone of fracturing strikes northwest and dips 45 to 85 degrees to the northeast. Mineralization pinches out to the north but is open southward where it is lost under till cover. A rock sample collected from this showing in 1967 analysed 0.23 per cent copper and 0.01 per cent molybdenum (Assessment Report 1823).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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- N MINER October 13, 1986
- N MINER MAG p. 1, March 1988
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 600
REPORT: RGEN0100

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DATE CODED: 1985/07/24
DATE REVISED: 1992/10/13

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 008**

NATIONAL MINERAL INVENTORY: 094E7 Cu2

NAME(S): **PILLAR**, PILLAR 9, PILLAR 26,
PILLAR GROUP, PILLAR 1-28, PILLAR NO.1 GROUP,
PILLAR NO.2 GROUP, PILLAR 1-75, JOCK,
JOCK 1-5

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:
LATITUDE: 57 15 37 N
LONGITUDE: 126 53 46 W
ELEVATION: 1790 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6348320
EASTING: 626901

COMMENTS: The location of three trenches exposing chalcopyrite in northwest-striking fractures over an area 15 by 183 metres and a depth of 31 metres (Assessment Report 1825). The showing is located in a north-facing cirque 4.2 kilometres south-southeast of The Pillar, south of Jock Creek and 6.0 kilometres east-northeast of the Shasta occurrence (094E 050). Smithers is 280 kilometres to the south.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 183 x 31 x 15 Metres STRIKE/DIP: 320/80E TREND/PLUNGE:
COMMENTS: Three trenches have exposed mineralization over an area 15 by 183 metres and a depth of 31 metres.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Black Lake Suite
Lower Jurassic			

LITHOLOGY: Hornblende Monzonite
Hornblende Syenite
Feldspar Porphyry
Hornblende Quartz Andesite
Hornblende Feldspar Andesite

HOSTROCK COMMENTS: The Toodoggone Formation is undivided on a regional scale at this location (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the south-central part of the Toodoggone gold camp.

CAPSULE GEOLOGY

The Pillar showing, composed of finely disseminated bornite in a fine-grained feldspar porphyry over 4.58 metres width, is located 4.75 kilometres north of Toodoggone Lake and west of Jack Lee Creek. The showing is located in the south-central part of the Toodoggone gold camp, roughly 280 kilometres north of Smithers.

The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

CAPSULE GEOLOGY

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Pillar showing is underlain by a 1.5 kilometre, subcircular hornblende syenite to monzonite stock of the Early Jurassic Black Lake Suite. This stock intrudes undivided volcanics of the Toodoggone Formation, which at this locality consist of feldspar porphyry, hornblende-quartz and hornblende-feldspar andesite (Assessment Report 1825).

Volcanic rocks are well fractured but fracture patterns are obscure. The dominant set strikes west-northwest and dip 70 to 80 degrees northeast. Intrusive rocks exhibit two fracture orientations; 320 degrees and dipping 80 degrees northeast and 045 degrees and dipping vertical.

At the Pillar showing sparse chalcopyrite and associated malachite mineralization occur in northwest-oriented fractures, which have been exposed in three trenches over a total area of 15 by 183 metres and to a depth of 31 metres. The showing is coincident with a strong copper soil geochemical high of 350 to 1050 parts per million and a magnetic high of greater than 4000 gammas (Assessment Report 1825).

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GSC OF 306; 483
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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG p. 1, March 1988
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
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DATE CODED: 1985/07/24
DATE REVISED: 1992/11/15

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 009**

NATIONAL MINERAL INVENTORY: 094E8 Cu2

NAME(S): **PINE**, PINE 1-10, BASNETT CLAIM GROUP,
BOFFO, BASNETT, DAVE'S DELIGHT,
DOG FRACTION, RICH, RICH 1-4

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E08E
BC MAP:
LATITUDE: 57 25 35 N
LONGITUDE: 126 10 06 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6368393
EASTING: 670017

COMMENTS: The location of the approximate centre of claims presently staked on the Pine showing (Assessment Report 9093). The Pine showing is located 7.5 kilometres southeast of Mount Bower and 6.0 kilometres northwest of Bower Creek. Ware is approximately 32 kilometres to the east.

COMMODITIES: Copper Lead Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Galena Sphalerite Tetrahedrite
COMMENTS: Tetrahedrite is minor.
ASSOCIATED: Quartz Calcite
COMMENTS: Lenticular quartz-calcite bodies in sericite and chlorite schist are bound by narrow discrete bands of sulphides (Assessment Report 9093).
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive
CLASSIFICATION: Sedimentary
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian-Ordovician	Kechika	Unnamed/Unknown Formation	
Lower Cambrian	Atan	Unnamed/Unknown Formation	

LITHOLOGY: Sericite Schist
Chlorite Schist
Phyllitic Limestone
Calcareous Shale
Limestone
Phyllite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

CAPSULE GEOLOGY

The Pine showing is located 7.5 kilometres southeast of Mount Bower and 6.0 kilometres northwest of Bower Creek. Ware is approximately 32 kilometres to the east.

The Basnett claim group are staked over an old prospect originally discovered by Emil Bronlund while prospecting for Cominco Limited in 1927. Work was carried out on this prospect until 1930. Since then, the ground has been held by various companies. In 1972, Nithex Exploration and Development Ltd. and David Minerals Ltd. conducted soil sampling, trenching and 45 metres of drilling in one hole.

Regionally, the Pine showing is hosted within a regional, northwest trending, fault-bound sequence of Cambrian to Ordovician rocks. These rocks have been divided into a lower sequence, the Lower Cambrian Atan Group, and an upper sequence, the Cambrian to Ordovician Kechika Group. The Atan Group, in the Toadoggone map area, is composed of three units. From oldest to youngest these are: quartzite with minor pebble conglomerate; impure quartzite, shale, local sandstone, conglomerate; and limestone, siltstone and dolomite. The Kechika Group, of which rocks of the Pine showing belong, is composed of phyllitic limestone, calcareous shale, limestone and phyllite.

Locally, the rocks underlying the Pine showing are divided into two groups: phyllite and calcareous shale near the east and

CAPSULE GEOLOGY

northeastern margins of the claims, and schists and limestones toward the west. Schists are divided into sericite schist and chlorite schist. Massive grey limestone beds are associated with the schists. The schists have undergone very tight folding, with the dominant schistosity striking 300 degrees and dipping near vertical.

The schists host all the sulphide mineralization. Numerous showings are present in old trenches scattered throughout the property. Trenches have exposed numerous lensoid quartz-calcite bodies, bound by narrow, discrete bands of galena, chalcopyrite, sphalerite and minor tetrahedrite, hosted in sericite and chlorite schist.

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GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/19

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 010**

NATIONAL MINERAL INVENTORY: 094E14 Cu1

NAME(S): **WEST 16**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E14W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 56 18 N
LONGITUDE: 127 25 15 W
ELEVATION: 1500 Metres

NORTHING: 6422937
EASTING: 593499

LOCATION ACCURACY: Within 500M

COMMENTS: The location of the centre of three shear zones in monzonite on the former West claims. The West 16 showing is located 750 metres west of Lunar Creek and roughly 24 kilometres north of the confluence of Lunar Creek with Geese Creek, north of the Stikine River. Dease Lake is 135 kilometres to the northwest.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: The South band contains small stringers of massive pyrite and magnetite.

ASSOCIATED: Pyrite Magnetite

ALTERATION: Malachite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Shear

CLASSIFICATION: Porphyry

SHAPE: Irregular

MODIFIER: Faulted

DIMENSION: 250 x 90 Metres STRIKE/DIP: 280/

TREND/PLUNGE:

COMMENTS: The North band, one of three shear bands, is 90 metres long and flares to 250 metres wide at its western end where it appears to be cut off by a north-striking fault (Assessment Report 3835).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Biotite Quartz Monzonite
Hornblende Monzonite
Hornblende Porphyritic Monzonite
Schist
Gneiss
Biotite Schist

HOSTROCK COMMENTS: The Middle Triassic Lunar Creek Complex lies immediately to the west.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Cassiar Mountains

TERRANE: Quesnel

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist

CAPSULE GEOLOGY

The West 16 showing, consisting of three shear zones with disseminated chalcopyrite in monzonite, is located 750 metres west of Lunar Creek and roughly 24 kilometres north of the confluence of Lunar Creek with Geese Creek, north of the Stikine River. Dease Lake is 135 kilometres to the northwest.

Regionally, the West 16 showing lies on the western edge of the Omineca Belt near the Kutcho fault, marking the boundary with rocks of the Intermontane Belt. The showing is along the margin of an unnamed Late Triassic to Early Jurassic granitoid pluton. At this showing the composition of this pluton is hornblende monzonite and biotite quartz monzonite. To the west lies the Middle Triassic Lunar Creek Complex.

The West 16 showing is underlain by three main rock types. The northern area is underlain by hypidiomorphic to locally porphyritic, hornblende monzonite. The hornblende monzonite flanks a west-northwesterly trending zone of biotite quartz monzonite. This biotite quartz monzonite is transected by at least three shear zones striking 280 to 290 degrees. Textures within these bands vary from schistose to gneissic, to schlieren, to lineated biotite quartz

CAPSULE GEOLOGY

monzonite. These bands locally contain noticeable amounts of magnetite. The north band is roughly 90 metres long and widens to the west to about 250 metres, where it appears to be cut off by a north-striking fault. The zone consists of alternating bands of biotite quartz monzonite and schist. The middle band, about 365 metres south, is a wide zone of migmatitic interlayered biotite quartz monzonite, schist and gneiss. The band has roughly the same strike as the north band and is about 365 metres wide. The south band exceeds 30 metres in length, and it becomes covered by drift.

Mineralization at the West 16 showing consists of sparsely disseminated chalcopyrite with associated malachite staining on fracture surfaces and associated with biotite, in three faulted bands of sheared, biotite schist. The three bands are the North, Middle and South. At the North band, mineralization is erratic over any measurable width and the grade of the best visible mineralization is estimated to be less than 0.2 per cent copper over 60 centimetres (Assessment Report 3835). Except for heavy malachite staining over 3.0 to 4.5 metres width, mineralization is sparse and erratic on the Middle band. The South band contains some narrow veins and small stringers of massive pyrite, magnetite and occasionally disseminated chalcopyrite.

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GSC MAP 14-1973
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/17

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 011**

NATIONAL MINERAL INVENTORY: 094E9 Cu2

NAME(S): **RPM, REV, DOLLY,**
DOLLY 1-4, BAS, BAS 1-10

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E09E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 31 41 N
LONGITUDE: 126 14 17 W
ELEVATION: 1880 Metres

NORTHING: 6379533
EASTING: 665372

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample 264501 from Trench 1, exposing a quartz-carbonate shear zone on the RPM and REV claims (Assessment Report 2471). The prospect is located 1.25 kilometres north-northwest of Mount Basnett, south of the Finlay River. Smithers is 320 kilometres to the south.

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
COMMENTS: Bornite is minor (Assessment Report 2471).
ASSOCIATED: Quartz Carbonate Pyrite Ankerite
ALTERATION: Malachite Azurite Silica
ALTERATION TYPE: Oxidation Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 1 Metres STRIKE/DIP: 354/75 TREND/PLUNGE:
COMMENTS: Two trenches 457 metres apart have exposed quartz-carbonate shear-hosted mineralization; over 67 centimetres in Trench 1. Attitude is for shearing in Trench 1 (Assessment Report 2471).

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Cambrian-Ordovician	Kechika	Unnamed/Unknown Formation	
Lower Cambrian	Atan	Unnamed/Unknown Formation	

LITHOLOGY: Black Slate
Limy Sediment/Sedimentary
Limestone
Calcareous Shale
Phyllite
Siltstone
Dolomite
Quartzite
Sandstone
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located immediately west of the Rocky Mountain Trench.

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1969
SAMPLE TYPE: Channel
COMMODITY GRADE
Silver 10.2900 Grams per tonne
Gold 0.1700 Grams per tonne
Copper 1.3200 Per cent
COMMENTS: Sample 264501, a 67-centimetre channel sample from Trench 1.
REFERENCE: Assessment Report 2471.

CAPSULE GEOLOGY

The RPM prospect, a quartz-carbonate shear zone exposed in two trenches, is located 1.25 kilometres north-northwest of Mount Basnett, south of the Finlay River. Smithers is 320 kilometres to

CAPSULE GEOLOGY

the south.

The regional geology consists of a northwest-trending belt of rocks of the Lower Cambrian Atan Group and Cambrian to Ordovician Kechika Group within the Omineca Range and the Finlay River area. Limestone, phyllite, and calcareous shale comprise lithologies of the Kechika Group and limestone, siltstone, dolomite, quartzite, shale, sandstone and conglomerate comprise the Atan Group. The general trend of these formations is 345 to 350 degrees with steep dips to the southwest. Contacts between units are fairly sharp.

The RPM showing is underlain by a dark band of laminated black slate in contact with limy rocks. The contact is gradational where the slates grade into unfoliated limestone. The slaty rocks strike 315 to 320 degrees and dip 60 to 75 degrees southwest. The finely laminated sequence exhibits some overturning. A major northwest-striking fracture or shear zone has been traced for 914 to 1219 metres length, parallel to subparallel to a major quartz-ankerite zone. Shearing was observed mainly as quartz filling in fractures ranging from 0.91 to 7.62 metres in length. This quartz-ankerite zone effectively controls the horizontal extent of the mineralized structure.

Copper-quartz-carbonate mineralization occurs along a bedding contact, adjacent to a single continuous shear with an iron-rich matrix. Sulphides consist of chalcopyrite, pyrite and minor bornite with associated malachite and azurite. The exposed width in two trenches is about 67 centimetres. Trench 1 exposed a near-bedding parallel shear, dipping 75 degrees southwest, about 10 to 15 degrees steeper than bedding. Mineralization is evident 3 to 4.6 metres west of Trench 1 as a silicified zone. Trench 2, 457 metres southeast of Trench 1, exposes a shear zone 15 to 20 centimetres wide and dipping 35 degrees to the southwest.

Sample 264501 from Trench 1 analysed 1.32 per cent copper, 10.29 grams per tonne silver and 0.17 gram per tonne gold, over 66 centimetres width. Sample 264502 from Trench 2 analysed 0.66 per cent copper, 13.7 grams per tonne silver and 0.17 gram per tonne gold (Assessment Report 2471).

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG p. 1, March 1988
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
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Mineralization, Toadoggone River Area, North-Central British
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Jurassic Toadoggone Formation, Toadoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/02

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 012**

NATIONAL MINERAL INVENTORY: 094E2 Cu1

NAME(S): **CAIRN**, CAIRN 1-12, SOUTH TOODOGGONE CAIRN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 03 41 N
LONGITUDE: 126 50 01 W
ELEVATION: 1600 Metres

NORTHING: 6326318
EASTING: 631379

LOCATION ACCURACY: Within 500M

COMMENTS: The centre of a group of four Crown-granted claims, located approximately 5 kilometres due west of the Kemess North occurrence (094E 021), some 280 kilometres north of Smithers (Energy, Mines and Resources Canada Corporation File: Annual Report and Statements, (December 31, 1932), The Consolidated Mining and Smelting Company of Canada Limited).

COMMODITIES: Copper Lead Zinc Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Galena Sphalerite
ASSOCIATED: Specularite Rhodochrosite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Stockwork
CLASSIFICATION: Replacement
TYPE: K01 Cu skarn
DIMENSION: 122 x 6 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Replacement mineralization occurs in fractures in limestone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Unnamed/Unknown Formation	
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Limestone
Plagioclase Augite Porphyritic Andesite
Argillite
Chert
Quartzite
Breccia
Conglomerate
Porphyritic Monzonite
Quartz Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1931
SAMPLE TYPE:	Grab		
COMMODITY	GRADE		
Silver	2070.8000	Grams per tonne	
Gold	1.3700	Grams per tonne	
Copper	19.7000	Per cent	
Lead	12.1000	Per cent	

COMMENTS: A picked (select high grade) sample.
REFERENCE: EMR MP CORPFILE - Annual Report 1932-Consolidated Mining and Smelting.

CAPSULE GEOLOGY

The Cairn prospect is located approximately 5.2 kilometres due west of the Kemess North occurrence (094E 021), some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar

CAPSULE GEOLOGY

mountains at the southern end of the Toodoggone gold camp. The Cairn prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Thutade Lake area is largely underlain by andesite volcanics and related sediments of the Takla Group and small pockets of Asitka Group sediments. The major structures in the area are north-northwest striking faults, such as the Moose Valley fault and the Ingenika fault.

The property is underlain by several bodies of recrystallized limestone belonging to the Asitka Group. Lesser fine grained to coarse plagioclase and augite porphyritic, grey to greenish grey to maroon andesite, argillite, chert, quartzite, breccia and conglomerate of the Takla Group and porphyritic monzonite, quartz monzonite, and granodiorite of the Early Jurassic Kemess pluton crop out surrounding the limestone lenses.

Extensive mineralization occurs in a fracture-controlled replacement zone approximately 6.10 metres wide near the contact between Asitka Group limestone and the Kemess pluton. The zone consists of two main fractures in limestone, which intersect each other at 035 degrees. While the fractures host mineralization, the intersection of these fractures hosts the most intense mineralization with up to 6.10 metres of sulphides. Chalcopyrite with lesser galena and sphalerite comprise mineralization in a gangue of specularite, rhodochrosite, and altered limestone and quartz. Preliminary prospecting indicates ore over 121.9 metres and possibly up to 213.4 metres strike length.

The best material, from chip samples, assayed 125.14 grams per tonne silver and 7 per cent copper over a width of 6.86 metres. Low-grade material assayed 33.9 grams per tonne silver and 2.13 per cent copper (Energy, Mines and Resources Canada Corporation File - Annual Report and Statements (1931), The Consolidated Mining and Smelting Company of Canada). A picked (select high grade) sample assayed 1.37 grams per tonne gold, 2070.9 grams per tonne silver, 19.7 per cent copper, and 12.1 per cent lead (Energy, Mines and Resources Canada Corporation File - Annual Report and Statements (1932), The Consolidated Mining and Smelting Company of Canada).

Auterra Ventures Inc. sampled the property in 1998.

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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- GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32

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RUN TIME: 11:51:27

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
PR REL Auterra Ventures Inc., September 23, 2002
W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW <http://www.infomine.com/index/properties/CAIRN.html>;
<http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/02

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 013**

NATIONAL MINERAL INVENTORY: 094E2 Zn1

NAME(S): **THUTADE 36**, THUTADE 34, THUTADE,
THUTADE 1-44, RON, RON 1-2,
LAKE, LAKE 1-4, MAIN ZONE,
NO. 1 SKARN, SHOWING 3

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 03 03 N
LONGITUDE: 126 51 53 W
ELEVATION: 1170 Metres

NORTHING: 6325070
EASTING: 629524

LOCATION ACCURACY: Within 500M

COMMENTS: Location of drillholes 84-3, 4 and 5, approximately 8.5 kilometres
west-northwest of the Kemess South occurrence (094E 094), some 260
kilometres north of Smithers (Assessment Report 13022).

COMMODITIES: Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite
ASSOCIATED: Carbonate
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated
CLASSIFICATION: Skarn Replacement Epigenetic
TYPE: K02 Pb-Zn skarn
DIMENSION: 20 x 5 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralization is hosted in skarn over a minimum of 20 metres strike
length and 5 metres width (Assessment Report 18241).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Limestone
Plagioclase Augite Porphyritic Andesite
Porphyritic Monzonite
Quartz Monzonite
Granodiorite
Marble
Argillite
Chert
Quartzite
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist
Zeolite
COMMENTS: Located in southwest corner of Tooodoggone gold camp.

INVENTORY

ORE ZONE: MAIN REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Silver 13.4000 Grams per tonne
Lead 0.9500 Per cent
Zinc 1.7500 Per cent
COMMENTS: Results are from drillhole 84-3 over a 5.8-metre interval.
REFERENCE: Assessment Report 13022.

CAPSULE GEOLOGY

The Thutade 36 skarn prospect is located approximately 8.5 kilometres west-northwest of the Kemess South occurrence (094E 094), some 260 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Thutade 36 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Thutade Lake area is largely underlain by andesite volcanics and related sediments of the Takla Group and small pockets of Asitka Group sediments. The major structures in the area are north-northwest striking faults, such as the Moose Valley fault and the Ingenika fault. Extensive exploration, including diamond drilling, was conducted on the ground around the Thutade 36 skarn prospect between 1970 to 1984. Some nine mineral showings were found. The area hosts fault and/or skarn controlled copper, lead, zinc and silver occurrences throughout.

The prospect is underlain by fine grained to coarse plagioclase and augite porphyritic, grey to greenish grey to maroon andesite, argillite, chert, quartzite, breccia and conglomerate of the Takla Group and the Early Jurassic Kemess pluton, a large intrusive body of porphyritic monzonite, quartz monzonite and granodiorite. Several bodies of marble have been mapped along the northeast corner of Thutade Lake belonging to the Asitka Group.

Mineralization consists of sphalerite, galena, pyrite and chalcopyrite in skarn, cutting white massive and crystalline limestone, over a minimum width of 5 metres and a minimum strike length of 20 metres. An increase in alteration and mineralization was noted from north to south in this particular area.

The mineralization was intersected by 3 drillholes in 1984. Drillhole 84-3 intersected 5.8 metres grading 0.95 per cent lead, 1.75 per cent zinc and 13.4 grams per tonne silver (Assessment Report 18241). Drillhole 84-4 intersected 10 metres grading 0.05 per cent lead, 0.27 per cent zinc and 3.1 grams per tonne silver (Assessment Report 18241).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
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- N MINER MAG March 1988, p. 1
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RUN TIME: 11:51:27

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WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/06/01

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 014**

NATIONAL MINERAL INVENTORY: 094E2 Zn1

NAME(S): **THUTADE 37**, THUTADE 5, THUTADE,
THUTADE 1-44, RON, RON 1-2,
LAKE, LAKE 1-4, SHOWING 4

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 03 18 N
LONGITUDE: 126 52 00 W
ELEVATION: 1185 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of drillhole 84-6, approximately 9 kilometres west-northwest of the Kerness South occurrence (094E 094), some 260 kilometres north of Smithers (Assessment Report 13022).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6325530
EASTING: 629392

COMMODITIES: Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite
ASSOCIATED: Carbonate
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Vein Disseminated
CLASSIFICATION: Skarn Replacement Epigenetic
TYPE: K02 Pb-Zn skarn
DIMENSION: 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A 2-metre interval of mineralized skarn was intersected in drillhole 84-6.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Kerness Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Cherty Limestone
Plagioclase Augite Porphyritic Andesite
Porphyritic Monzonite
Quartz Monzonite
Granodiorite
Marble
Argillite
Chert
Quartzite
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1984	
SAMPLE TYPE: Drill Core		
<u>COMMODITY</u>	<u>GRADE</u>	
Silver	6.3000	Grams per tonne
Copper	0.0056	Per cent
Lead	0.5600	Per cent
Zinc	1.3400	Per cent

COMMENTS: Results are from drillhole 84-6 over a 2-metre interval.
REFERENCE: Assessment Report 13022.

CAPSULE GEOLOGY

The Thutade 37 skarn prospect is located approximately 8.7 kilometres west-northwest of the Kemess South occurrence (094E 094), some 260 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Thutade 37 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Thutade Lake area is largely underlain by andesite volcanics and related sediments of the Takla Group and small pockets of Asitka Group sediments. The major structures in the area are north-northwest striking faults, such as the Moose Valley fault and the Ingenika fault. Extensive exploration, including diamond drilling, was conducted on the ground around the Thutade 37 prospect between 1970 to 1984. Some nine mineral showings were found. The area hosts fault and/or skarn controlled copper, lead, zinc and silver occurrences throughout.

The Thutade 37 skarn prospect is underlain by fine grained to coarse plagioclase and augite porphyritic, grey to greenish grey to maroon andesite, argillite, chert, quartzite, breccia and conglomerate of the Takla Group and the Early Jurassic Kemess pluton, a large intrusive body of porphyritic monzonite, quartz monzonite and granodiorite. Several bodies of marble have been mapped along the northeast corner of Thutade Lake belonging to the Asitka Group.

Mineralization consists of narrow stringers of calcsilicates and sphalerite, galena, pyrite and chalcopyrite in a white to brown, cherty limestone. The main area of interest is where a fault in skarn and volcanic rocks is mineralized with galena, sphalerite, pyrite and chalcopyrite. High concentrations of the sulphides were found on the west side of a steeply dipping, north-striking crossfault.

Five samples were collected from two trenches. The analytical results from sample TL25, a 70-centimetre chip sample, are 6.5 per cent zinc, 2.51 per cent lead, 0.81 per cent copper and 67.1 grams per tonne silver (Assessment Report 18241). A grab sample of blast material from Trench 3 assayed 0.253 per cent copper, 1.67 per cent lead, 3.47 per cent zinc and 0.99 gram per tonne silver (Assessment Report 18241). Drillhole 84-6 intersected 18.2 metres of locally weak skarn with lead, zinc and silver mineralization, overlying silicified andesites that are intruded by monzonite dikes. The best analytical results from drill core were 0.56 per cent lead, 1.34 per cent zinc, 0.0056 per cent copper and 6.3 grams per tonne silver over 2 metres (Assessment Report 13022).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
- EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
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- GSC BULL 270

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PAGE: 617
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MIN REV September/October, 1982; July/August, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982; October 13, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/01/06

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 015**

NATIONAL MINERAL INVENTORY:

NAME(S): **THUTADE 4**, THUTADE, THUTADE 1-44,
RON, RON 1-2, LAKE,
LAKE 1-4, SHOWING 8

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6324622
EASTING: 629151

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 02 49 N
LONGITUDE: 126 52 16 W
ELEVATION: 1145 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of drillhole 84-8, approximately 8 kilometres west-northwest of the Kerness South occurrence (094E 094), some 260 kilometres north of Smithers (Assessment Report 13022).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 91 x 45 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A 6-metre interval of mineralization was encountered in drillhole 84-8. On surface, mineralization has been traced over an area 91 by 45 metres (Assessment Report 13022).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Kerness Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Porphyritic Augite Plagioclase Andesite
Porphyritic Monzonite
Quartz Monzonite
Granodiorite
Marble
Argillite
Chert
Quartzite
Breccia
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist Zeolite
PHYSIOGRAPHIC AREA: Omineca Mountains

COMMENTS: Located in southwest corner of Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Silver 6.1000 Grams per tonne
Copper 0.4100 Per cent
COMMENTS: Results are from drillhole 84-8 over a 6-metre interval near the surface.
REFERENCE: Assessment Report 13022.

CAPSULE GEOLOGY

The Thutade 4 prospect is located approximately 8.5 kilometres west-northwest of the Kemess South occurrence (094E 094), some 260 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Thutade 4 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Thutade Lake area is largely underlain by andesite volcanics and related sediments of the Takla Group and small pockets of Asitka Group sediments. The major structures in the area are north-northwest striking faults, such as the Moose Valley fault and the Ingenika fault. Extensive exploration, including diamond drilling, was conducted on the ground around the Thutade 4 prospect between 1970 to 1984. Some nine mineral showings were found. The area hosts fault and/or skarn controlled copper, lead, zinc and silver occurrences throughout.

The Thutade 4 prospect is underlain by fine grained to coarse plagioclase and augite porphyritic, grey to greenish grey to maroon andesite, argillite, chert, quartzite, breccia and conglomerate of the Takla Group, and the Early Jurassic Kemess pluton, a large intrusive body of porphyritic monzonite, quartz monzonite and granodiorite. Several bodies of marble have been mapped along the northeast corner of Thutade Lake belonging to the Asitka Group.

Mineralization consists of chalcopyrite, pyrite and malachite occurring as thin smears on fractures and in narrow veinlets in moderately altered purple to green porphyritic andesite. This mineralization has been traced over an area of 91 by 45 metres.

Samples from drillhole 84-8, located at one of several trenches, analysed 0.41 per cent copper and 6.1 grams per tonne silver over 6 metres near surface (Assessment Reports 13022, 18241). Porphyritic grey and maroon andesite and lesser amounts of similar fine-grained andesite were the lithologies predominantly intersected.

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
- EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
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- GSC P 80-1A, pp. 27-32
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- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- MIN REV September/October, 1982; July/August, 1986
- N MINER MAG March 1988, p. 1
- W MINER April, 1982; October 13, 1986

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PAGE: 620
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DATE CODED: 1985/07/24
DATE REVISED: 1992/01/07

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 016**

NATIONAL MINERAL INVENTORY: 094E2 Cu3

NAME(S): **PINE**, FIN (AREA A), PINE 1-144,
FIN, FIN 1-19, ZIP,
GEM, KID

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02E

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 57 12 44 N
LONGITUDE: 126 42 51 W

NORTHING: 6343325
EASTING: 638053

ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: Location of drillhole 79-1, approximately 20 kilometres northeast of the northern end of Thutade Lake and 1 kilometre south of the Finlay River, about 280 kilometres north of Smithers (Assessment Report 8331).

COMMODITIES: Copper Gold Silver Molybdenum Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite Magnetite Molybdenite

ASSOCIATED: Gold
ALTERATION: Quartz Epidote Chlorite Quartz Sericite Pyrite
Magnetite Hematite

COMMENTS: Also gypsum, malachite, azurite and chrysocolla.
ALTERATION TYPE: Propylitic Sericitic Argillic Epidote Hematite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Disseminated
CLASSIFICATION: Porphyry Hydrothermal Epigenetic

TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 2000 x 1000 Metres STRIKE/DIP: TREND/PLUNGE:

COMMENTS: Pine zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Unnamed/Unknown Informal
Lower Jurassic			

LITHOLOGY: Hornblende Diorite
Hornblende Biotite Granodiorite
Dacite Flow
Dacite
Porphyritic Dacite Rhyodacite
Andesite Trachyandesite Pyroclastic
Latite Quartz Latite
Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southeast margin of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Indicated YEAR: 1997

QUANTITY: 70000000 Tonnes

COMMODITY GRADE

Copper 0.1500 Per cent

Gold 0.5700 Grams per tonne

COMMENTS: Resource estimate by Stealth Mining Corporation in 1997. Grades may be higher.

REFERENCE: Information Circular 1998-1, page 25.

CAPSULE GEOLOGY

The Fin (Area A) porphyry copper prospect is located approximately 20 kilometres northeast of the northern end of Thutade

CAPSULE GEOLOGY

Lake and 1 kilometre south of the Finlay River, some 280 kilometres north of Smithers. The Sturdee River airstrip is approximately 27 kilometres west of the property. The occurrence lies within the Omineca-Cassiar mountains along the southeastern margin of the Toodoggone gold camp. The Fin (Area A) prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Fin (Area A) prospect covers portions of an area that was worked by Kennco Exploration (Western) Limited during the period June 1968 to April 1973. Kennco's work included soil and silt sample geochemical surveys, ground and airborne magnetometer surveys and a reconnaissance induced polarization survey and geological mapping. In 1978, Bradford D. Pearson staked and optioned the property to Riocanex. Work done by Riocanex included line cutting, geological mapping, and soil and silt sampling. This was followed in late 1979 with 377 metres of diamond drilling in 2 holes. In 1980, Riocanex drilled an additional 10 holes totalling 977 metres in addition to a ground magnetometer survey of 50.7 kilometres. The drilling was confined to the southwest and central portions of the area. The 1982 mapping program by Brinco Mining Ltd. was confined to the northeast and central portions of the property. A geochemical sampling program in 1987 concentrated on volcanic rocks on the Fin 2 claim. A sampling program was focused on rocks near a volcanic-plutonic contact.

The prospect is underlain by Lower Jurassic Toodoggone Formation volcanic rocks that have been intruded by Lower to Middle Jurassic granodiorites. The Toodoggone volcanics consist mainly of pink dacite flows and fine-grained porphyritic rocks of dacite-rhyodacite composition of the Saunders Member, with minor andesite to trachyandesite pyroclastics and strongly potassic latite to quartz latite of the Metsantan Member. Plutonic rocks consist mainly of hornblende and biotite granodiorite with lesser hornblende diorite. The granodiorite phases range in texture from inequigranular to porphyritic. Swarms of red dikes of a variety of compositions cut these rock types. Dike swarms in the plutonic region strike northerly and some indication that they radiate outward from a point to the south part of the Fin (Area A) prospect.

Weak copper-molybdenum mineralization is found in four locations at the Fin (Area A) prospect, associated with several zones of intense propylitic, phyllic and minor argillic alteration in hornblende diorite. Propylitic alteration is widespread, occurring as epidote veinlets, epidote and chlorite replacement of ferromagnesian minerals and more intense magnetite and pyrite. Phyllic alteration is located near the centre of the property in zones up to 250 metres diameter, altering all primary textures and characterized by quartz, sericite and pyrite. Argillic alteration occurs in one or two small localities. Magnetite and pyrite halos show a spatial distribution around intensely altered zones and copper-gold mineralization. Sericite alteration is erratic and is probably structurally controlled. There are areas at surface where sericite alteration is not accompanied by pyrite but generally it is present in low to moderate amounts, increasing with sericite along structures.

Some zones of intense, structurally controlled pyrite-quartz-sericite alteration occur in the volcanics but are barren of any metals. The principal type of alteration in volcanics is epidotization which is locally strongly developed in some 25 per cent of the rocks, particularly around drillhole 80-5. It occurs principally as replacements of feldspar and mafic phenocrysts. Another widespread alteration type is pervasive argillization and hematization of feldspars in the latitic rocks. Sericitization, silicification, carbonatization and pyritization are infrequent and

CAPSULE GEOLOGY

generally weakly developed.

During November and December 1979, two diamond-drill holes totalling 377 metres were drilled near the A showing, a zone of copper carbonates coating fractures in an area of quartz stockwork. Drillhole 79-1, collared on the A showing, the largest area of copper-gold mineralization found on the property, was drilled vertically to 177 metres.

Results of a geochemical program conducted in 1990 indicate two different types of mineralization: 1) copper-gold mineralization within volcanic rocks and 2) copper-molybdenum mineralization within plutonic rocks. Copper mineralization, in the form of copper carbonates is found in four areas on the property. Native gold occurs as separate grains or attached to chalcopyrite. Mineralization is confined to zones of high pyrite and magnetite (3 to 5 per cent). It occurs coating fractures in the area of quartz stockwork with veinlets ranging from 0.5 to 1.5 centimetres. The stockwork is found in the altered intrusion but not in the surrounding volcanics. In drillhole 79-1, stockwork mineralization extends from surface to 51.0 metres and again from 102.0 to 127.5 metres. The alteration assemblage in the quartz stockwork consists of quartz-sericite-pyrite-chlorite with lesser gypsum and epidote. The mineralization consists of disseminated chalcopyrite, molybdenite, pyrite and magnetite. Both magnetite and pyrite occur as large clusters and veinlets. The largest and most interesting mineralization covers an area 40 by 10 metres, and has been called the A showing. The second covers an area 7 by 5 metres. Secondary copper minerals are malachite with minor amounts of azurite and chrysocolla. All mineralization is accompanied by pyrite.

The upper mineralized section from drillhole 79-1 averaged 51 metres of 4.1 grams per tonne silver, 0.7 gram per tonne gold, and 0.27 per cent copper (Assessment Report 8331). The lower 25.5-metre section averaged 3.1 grams per tonne silver, 0.7 gram per tonne gold and 0.34 per cent copper (Assessment Report 8331). The mineralized and altered sections in drillhole 79-1 are in sharp contact with unaltered zones. No copper mineralization was found in fresh granodiorite. Hole 79-2 was drilled to test the lateral extension of mineralization. The hole intersected a weakly mineralized zone from 60.0 to 144.0 metres which assayed 1.2 grams per tonne silver, 0.15 gram per tonne gold, and 0.10 per cent copper (Assessment Report 8331).

Ten holes were drilled in 1980 to further test the lateral extent of mineralization at the A showing. Drillhole 80-2 was the best mineralized and analysed 4.5 grams per tonne silver, 0.5 gram per tonne gold and 0.25 per cent copper (Assessment Report 8686). Rock sample W82-54, taken from Trench 2, assayed 0.20 per cent molybdenum, 0.58 per cent copper, 0.032 per cent lead, 0.105 per cent zinc, 4.6 grams per tonne silver and 10 grams per tonne gold (Assessment Report 11032).

The best assay results in 1987 were from hornblende granodiorite sample G-405 yielding 0.475 per cent copper, 0.300 per cent zinc and 0.2 gram per tonne silver (Assessment Report 16502).

In 1990, both intrusive and volcanic rock samples assayed anomalous copper, molybdenum and gold. A sample of diorite assayed 0.952 per cent copper and 0.799 per cent zinc and a sample of granodiorite assayed 0.183 per cent molybdenum and 0.140 per cent copper (Assessment Report 20300).

Stealth Mining Corporation has completed a 12-hole, 2200-metre diamond drilling program in 1997. Geological reserves estimated by Romulus Resources in 1993 were 40 million tonnes grading 0.57 gram per tonne gold and 0.15 per cent copper (T. Schroeter, personal communication, 1997). Stealth increased the geological resource to 70,000,000 tonnes at higher grades than the initial resources (i.e. 0.15 per cent copper and 0.57 gram per tonne gold) (Information Circular 1998-1, page 25). In 1999, the company drilled 3 holes totalling about 800 metres.

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GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
N MINER October 13, 1986; May 4, 1998
N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1997/07/14

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 017**

NATIONAL MINERAL INVENTORY: 094E6 Pb1

NAME(S): **SAUNDERS**, SAUNDERS 1-4, SAUNDERS NO. 2 GRP.,
SAUNDERS 58-61, SAUNDERS 82-83, SAUNDERS 160-162,
CHAPPELLE, CHAPPELLE 134, CHAPPELLE 136-137,
CHAPPELLE 195, CHAPPELLE 197, NE,
GO

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 20 04 N
LONGITUDE: 127 04 44 W
ELEVATION: 1820 Metres

NORTHING: 6356248
EASTING: 615645

LOCATION ACCURACY: Within 500M

COMMENTS: Location of sample GWM-88-276 taken from a 3 to 4-metre wide quartz breccia zone, trending 170 degrees, approximately 6 kilometres east-southeast of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 18628).

COMMODITIES: Silver Gold Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena

ASSOCIATED: Quartz Barite Pyrite

COMMENTS: Quartz-barite breccia is totally quartz flooded.

ALTERATION: Silica Malachite Azurite

COMMENTS: Potassium-argon and argon-argon dates on alteration gangue minerals at the nearby Lawyers mine (094E 066) and near the White Pass showing (094E 147) are both Lower Jurassic (Bulletin 86).

ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Breccia Vein

CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 80 x 4 Metres

STRIKE/DIP:

TREND/PLUNGE: 170/

COMMENTS: A quartz-barite breccia zone, trending 170 degrees, has been mapped as being 80 metres long by 3 to 4 metres wide (Assessment Report 18628).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
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Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 192.9 +/- 2.7 Ma			
DATING METHOD: Argon/Argon			
MATERIAL DATED: Hornblende			

LITHOLOGY: Welded Dacitic Ash Flow
Dacite
Pyroxene Biotite Hornblende Flow
Breccia
Lapilli Tuff
Crystal Tuff
Ash Tuff
Lahar
Epiclastic
Pyroclastic

HOSTROCK COMMENTS: Volcanic rocks are assigned to the Saunders Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Silver	164.6000	Grams per tonne
Gold	1.4100	Grams per tonne

COMMENTS: Sample GWM-88-276.
REFERENCE: Assessment Report 18628.

CAPSULE GEOLOGY

The Saunders prospect is located approximately 6 kilometres east-southeast of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. The Saunders prospect lies within the Omineca-Cassiar mountains at the southern end of the Toadoggone gold camp. It is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Saunders prospect is underlain by a succession of lower to middle subaerial volcanic rocks and associated volcanoclastic sediments of the upper volcanic cycle of the Toadoggone Formation. Lithologies underlying the Saunders prospect consist predominantly of partly welded, crystal-rich dacitic ash flows of the Saunders Member. The dominant lithologies east of the prospect are delineated into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. To the north, a northeast and northwest-striking conjugate fault pair separate lithologies of the Saunders Member from latite lava flows with interflow lahar and mixed epiclastic and pyroclastic rocks of the Metsantan Member.

At the Saunders prospect, anomalous gold and silver are hosted in a quartz-barite breccia zone 80 metres long and 3 to 4 metres wide, trending 170 degrees. Mineralization consists of chalcopyrite, galena and pyrite with associated malachite and azurite. Breccia material has been totally quartz flooded.

Sample GWM-88-276 yielded assay values of 1.41 grams per tonne gold and 164.6 grams per tonne silver (Assessment Report 18628). Three other samples ranged from 0.02 to 0.40 gram per tonne gold and 16.5 to 34.0 grams per tonne silver (Assessment Report 18628).

A quartz vein, 130 metres due east of the quartz breccia, is also part of the Saunders prospect. The vein has a similar trend to the quartz breccia and is mapped as being approximately 50 metres long. Sampling conducted on this vein yielded values of 0.02 gram per tonne gold and 25.6 grams per tonne silver (Assessment Report 18628).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 627
REPORT: RGEN0100

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W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #201, 1982; #190, 1983; #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/17

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **URSUS 4**, URSUS, URSUS 1-4,
ORO, ORO 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11E
BC MAP:

LATITUDE: 57 33 32 N
LONGITUDE: 127 02 54 W
ELEVATION: 1825 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of samples 18387 and 18388 from undivided Hazelton Group volcanics. The Ursus 4 showing is located 5.75 kilometres east of Harmon Peak and 4.5 kilometres northeast of Midas Lake (Assessment Report 18026). Smithers is 300 kilometres to the south.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6381280
EASTING: 616767

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Unknown

COMMENTS: Mineralization may be related to a skarn zone 1 kilometre to the south.

ASSOCIATED: Unknown

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown

CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Jurassic
Upper Triassic
Lower Jurassic

GROUP

Hazelton
Takla

FORMATION

Unnamed/Unknown Formation
Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Black Lake Suite

LITHOLOGY: Volcanic
Limy Sediment/Sedimentary
Tuffaceous Mudstone
Tuff
Chert
Rhyolite
Biotite Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1988

SAMPLE TYPE: Grab

COMMODITY

Silver

GRADE

106.0000

Grams per tonne

Copper

2.1100

Per cent

COMMENTS: Sample 18388.

REFERENCE: Assessment Report 18026.

CAPSULE GEOLOGY

The Ursus 4 showing, consisting of several samples with anomalous silver and copper, is located 5.75 kilometres east of Harmon Peak and 4.5 kilometres northeast of Midas Lake (Assessment Report 18026). Smithers is 300 kilometres to the south.

The Ursus 4 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics

CAPSULE GEOLOGY

have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Ursus 4 showing is underlain by undivided volcanics of the Hazelton Group. Roughly one kilometre to the south, undivided Hazelton Group volcanics are separated from volcanics of the Takla Group by a major east-striking fault. The Takla Group at this location are composed of limy sediments, laminated tuffaceous mudstones, tuffs, cherts and rhyolites. To the east of the Ursus showing on the west side of Midas Creek, a biotite granodiorite stock of the Early Jurassic Black Lake Suite intrudes this volcanic sequence.

A total of 49 rock samples were collected during property exploration in 1987. Several of these from the Hazelton volcanics yielded anomalous silver and copper. The best two of these assayed as follows: sample 18388 yielded 106.0 grams per tonne silver and 2.11 per cent copper; and sample 18397, taken 500 metres to the northwest, yielded 36.0 grams per tonne silver and 1.29 per cent copper (Assessment Report 18026).

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DATE CODED: 1992/12/21
DATE REVISED: 1992/12/21

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 019**

NATIONAL MINERAL INVENTORY: 094E11 Cu1

NAME(S): **CHUCK**, CHETA, MALACHITE MESA,
DOUG, SILVER GLANCE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 36 38 N
LONGITUDE: 127 20 08 W
ELEVATION: 1910 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6386573
EASTING: 599444

COMMENTS: The location of Sample CK-21 (Assessment Report 12871, Figure 6).
The Chuck showing is situated on a north-trending ridge approximately
4.6 kilometres northwest of Claw Mountain.

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT:	Chalcocite	Bornite	Chalcopyrite		
ASSOCIATED:	Quartz	Carbonate	Hematite	Magnetite	
ALTERATION:	Epidote	Chlorite	Calcite	Limonite	Albite
	Zeolite				
ALTERATION TYPE:	Propylitic		Albitic		Oxidation
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Fractured Sheared
DIMENSION:
COMMENTS: The strike and dip is for the quartz vein which hosts the discontinuous
chalcocite lenses.

STRIKE/DIP: 140/90

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Porphyritic Amygdaloidal Andesite
Basalt
Agglomerate
Tuff
Andesite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP: Pre-mineralization
GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Grab
COMMODITY: GRADE
Silver 195.0200 Grams per tonne
Copper 23.5000 Per cent
COMMENTS: Sample CK-21 is a select grab from a 2-centimetre wide lens of
chalcocite.
REFERENCE: Assessment Report 12871.

CAPSULE GEOLOGY

The Chuck showing, consisting of quartz, carbonate veins with sulphide mineralization, is situated on a north-trending ridge approximately 4.6 kilometres northwest of Claw Mountain. Mineralization was first discovered by Canadian Superior Exploration Limited in 1964. Work has been sporadic since that time. The Chuck showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks

CAPSULE GEOLOGY

exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Chuck showing is underlain by Takla Group volcanics and volcanoclastics comprised of porphyritic and amygdaloidal andesite and basalt with minor agglomerates and tuffs. This sequence is locally intruded by andesite dikes. All of the units have undergone weak propylitic alteration; epidote and chlorite are ubiquitous. Calcite, chlorite, and zeolites often fill the amygdules. Hematite and magnetite are found disseminated throughout the volcanic units. Sheared and fractured zones are abundant and are associated with limonite and minor albite alteration of the wallrock.

Chalcocite, bornite, chalcocite, and malachite are hosted within quartz-carbonate veins and along fracture surfaces associated with the shear zones. One lens of chalcocite, 0.5 by 2 centimetres, hosted within a discontinuous quartz-carbonate vein (140 degree strike, vertical dip) assayed 23.5 per cent copper and 195.02 grams per tonne silver (Assessment Report 12871, sample CK-21).

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GSC OF 306; 483
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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
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DATE CODED: 1985/07/24
DATE REVISED: 1992/12/10

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 020**

NATIONAL MINERAL INVENTORY: 094E11 Cu2

NAME(S): **MOOSE, HARMON, BEAR,
COUGAR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 34 23 N
LONGITUDE: 127 11 06 W
ELEVATION: 1750 Metres

NORTHING: 6382630
EASTING: 608549

LOCATION ACCURACY: Within 500M

COMMENTS: The location is centred on rock sample 6233, near the centre of the largest gossan (Assessment Report 8112, Map 2). The Moose showing is located approximately 2.5 kilometres northwest of Breccia Peak.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite Hematite Quartz
COMMENTS: Disseminated pyrite and hematite (up to 25 per cent) are common throughout the volcanic units.

ALTERATION: Limonite Malachite Azurite
COMMENTS: Large areas of limonite gossans with or without malachite and azurite occur in a number of locations.

ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Irregular
DIMENSION: 2000 x 200 Metres STRIKE/DIP: 150/80E TREND/PLUNGE:
COMMENTS: Strike and dip are for quartz veins. Dimensions are for the largest gossan.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Porphyritic Andesite
Lapilli Tuff
Volcanic Breccia
Rhyolite
Augite Porphyry Andesite Flow
Andesite Tuff
Quartz Diorite
Foliated Granodiorite
Feldspar Porphyry

HOSTROCK COMMENTS: Date given for the Black Lake stock is from Bulletin 86.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: GOSSAN

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1979
SAMPLE TYPE: Grab
COMMODITY: Copper GRADE: 0.3600 Per cent

COMMENTS: High-grade sample (6233) of gossan material.
REFERENCE: Assessment Report 8112.

CAPSULE GEOLOGY

The Moose showing is located approximately 2.5 kilometres

CAPSULE GEOLOGY

northwest of Breccia Peak.

The Moose showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Moose showing is underlain by Takla Group augite porphyry andesite flows and tuffs and Toodoggone Formation (Hazelton Group) porphyritic andesite, lapilli tuff, rhyolite, feldspar porphyry and volcanic breccia (McClair Member). These units are intruded to the north by foliated granodiorite and quartz diorite of the Early Jurassic Black Lake stock.

Widespread disseminated chalcopyrite and pyrite and up to 25 per cent hematite occurs sporadically throughout the area in all units. Rare sparsely mineralized quartz veins, striking 150 degrees and dipping 80 degrees to the east, occur in the Toodoggone volcanics. Intensive oxidation has developed extensive areas of limonite gossans, the largest of which measures 2000 by 200 metres and outcrops along a southerly flowing tributary of Hiamadam Creek. The gossans contain malachite and azurite in a number of locations. A high-grade grab sample of this material assayed 0.36 per cent copper and 2.7 grams per tonne silver (Sample 6233, Assessment Report 8112).

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1987-C328-C346; 1988-C185-C194
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
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GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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ECON GEOL Vol. 86, pp. 529-554, 1991
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DATE CODED: 1985/07/24
DATE REVISED: 1992/12/14

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 021**

NATIONAL MINERAL INVENTORY: 094E2 Cu4

NAME(S): **KEMESS NORTH**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094E02W 094E02E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 03 36 N
LONGITUDE: 126 45 34 W

NORTHING: 6326309
EASTING: 635877

ELEVATION: 1660 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Kemess North deposit, 2.5 kilometres east of Duncan Lake and 4.5 kilometres south of Attycelley Creek, approximately 271 kilometres north of Smithers. The Cheni mine extension of the Omineca Mining Road passes about 12 kilometres west of the property. See also Kemess South (094E 094).

COMMODITIES: Copper Gold Molybdenum

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Molybdenite Digenite

COMMENTS: Molybdenite is minor.

ASSOCIATED: Quartz Orthoclase Magnetite Hematite

ALTERATION: Quartz Sericite Pyrite Chlorite Epidote

ALTERATION: Albite Jarosite Kaolinite

COMMENTS: Also calcite and zeolites (laumontite). Whole rock date was determined from quartz-sericite-pyrite altered volcanic rocks (CIM Bulletin, Volume 73, pages 94-99).

ALTERATION TYPE: Sericitic Propylitic Zeolitic Leaching

MINERALIZATION AGE: Lower Jurassic

ISOTOPIC AGE: 182 +/- 6 Ma DATING METHOD: Whole Rock MATERIAL DATED: Whole Rock

DEPOSIT

CHARACTER: Stockwork Disseminated

CLASSIFICATION: Porphyry

TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Upper Triassic
Lower Jurassic
Lower Jurassic

GROUP

Takla
Hazelton

FORMATION

Unnamed/Unknown Formation
Toodoggone

IGNEOUS/METAMORPHIC/OTHER

Black Lake Suite

LITHOLOGY: Augite Andesite Porphyry
Feldspar Porphyritic Andesite Flow
Andesite
Basaltic Flow
Basaltic Tuff
Basalt
Feldspar Porphyry
Feldspar Porphyry Tuff Breccia
Quartz Monzonite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional Contact

PHYSIOGRAPHIC AREA: Spatsizi Plateau

RELATIONSHIP:

GRADE: Greenschist
Hornfels

INVENTORY

ORE ZONE: TOTAL

REPORT ON: Y

CATEGORY: Inferred YEAR: 2001

QUANTITY: 442000000 Tonnes

COMMODITY

Gold 0.4000 Grams per tonne
Copper 0.2300 Per cent

COMMENTS: A gold equivalent cutoff grade of 0.6 gram per tonne was used. Within the inferred mineral resource is a higher grade core zone estimated to contain 170 million tonnes grading 0.5 gram per tonne gold and 0.29 per cent copper using a gold equivalent cutoff grade of 0.8 gram per tonne.

REFERENCE: Stockwatch - Northgate Exploration Ltd., November 15, 2001.

CAPSULE GEOLOGY

The Kemess property is located in the southern part of the Toodoggone mining district in north-central British Columbia. The Toodoggone district lies within the eastern margin of the Intermontane Belt and is underlain by a northwesterly trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions covering an area of 90 by 25 kilometres. The basement rocks are Proterozoic metasedimentary equivalents of the Hadrynian Ingenika Group. These rocks are unconformably overlain by volcanic and sedimentary units of the Permian Asitka Group which are in turn overlain by Upper Triassic basaltic to andesitic flows, volcanoclastics and minor limestone of the Takla Group. Volcanoclastic rocks of the Lower Jurassic Hazelton Group and rhyolitic to dacitic flows, intrusions and volcanoclastics of the Lower Jurassic Toodoggone Formation (Hazelton Group) overlie the Takla Group. Further to the west, nonmarine sediments of the Cretaceous Sustut Group overlie the volcanic strata and form the western margin of the district.

The Early Jurassic Black Lake Suite of quartz monzonitic to granodioritic composition have intruded the older strata in the central and eastern parts of the region, and form the eastern margin of the Toodoggone district. Within the district, syenomonzonitic and quartz feldspar porphyritic dikes may by feeders to the Toodoggone Formation.

The southern part of the Kemess North occurrence area is underlain by intercalated andesitic flows and pyroclastics of the Takla Group. Augite andesite underlies the western portion of the property while feldspar porphyritic andesite flows and breccias dominate the eastern portion. The volcanic rocks are massive, but the trend of the Takla Group is indicated by local limestone lenses that strike southeasterly and dip 60 degrees southwest. Local basaltic dikes intrude these units with north-northwest and north strikes.

The central portion of the area is underlain by intermediate pyroclastic rocks of the Toodoggone Formation that dip gently southward. The major units are lithic and crystal tuffs and tuffaceous breccia.

The extreme northwest and south portions of the property are underlain by stocks of granodioritic and quartz monzonitic composition of the Black Lake Suite. These stocks intrude both the Takla and Toodoggone rocks. Locally, porphyritic stocks and dikes, comagmatic with an underlying granitic pluton, intrude volcanic rocks. The most dominant of these intrusions is a syenitic porphyry dike.

Takla Group rocks are generally comprised of the following: augite porphyry, basaltic flows and tuffs; bladed feldspar porphyry; bladed feldspar porphyry tuff breccia; and basaltic dikes.

The Black Lake Suite is comprised of quartz monzonite, granodiorite, feldspar-quartz-biotite porphyry, feldspar hornblende porphyry and crowded feldspar hornblende porphyry, quartz plagioclase porphyry, and leucocratic feldspar hornblende porphyry. The Takla rocks have undergone intense structural deformation. Brittle fracturing is the dominant structural style. Myriad small-scale fractures of many generations are evident. Earlier ones are healed by quartz, carbonates, zeolites or gypsum while some later ones are still open. Numerous faults, shears and fractures cut and displace the strata to a much greater degree than the intrusions. Based upon the distribution and trend of the lithologies and structural data, major normal and transcurrent faulting occur commonly in an east-northeasterly direction (070 degrees).

There are four recognized types of alteration, quartz-sericite-pyrite, propylitic, zeolitic and hornfelsic, which appear to occur only within the volcanic and pyroclastic rocks.

Pervasive quartz-sericite-pyrite alteration occurs as a large central zone and appears as envelopes surrounding veinlets of pyrite and microfractures. It is characterized by pale bleached rock with abundant boxworks commonly lined with jarosite after pyrite. Plagioclase is altered to quartz and muscovite, and sericite may form approximately 15 per cent of the rock. Chlorite and kaolinite form approximately 30 per cent of the rock. Rutile (?) occurs as disseminated bright orange grains. The abundance of sericite and sulphide boxworks decreases with a decrease in the intensity of alteration, and sulphides (pyrite) and goethite become increasingly more common. Only quartz-sericite-pyrite alteration is known to be directly associated with the mineralization.

Propylitic alteration occurs as an elongate east-west zone parallel to and south of the central quartz-sericite-pyrite zone. Propylitized rocks are green, and are characterized by local albitization and variable epidote, chlorite and calcite.

Zeolitic alteration is most common in an area north of the quartz-sericite-pyrite zone; however, it is found locally throughout

CAPSULE GEOLOGY

the property. Laumontite has been identified by x-ray diffraction and often occurs as fracture fillings up to 3 millimetres thick in local shear zones. It is common in the Takla Group.

Hornfels alteration forms an irregular zone of variable intensity primarily within a crystal tuff unit. This zone seems to parallel the quartz monzonite and granodiorite intrusive contacts. Intensely hornfelsed rocks are massive, fine grained and pale grey to brown in colour. Alteration products include quartz, andalusite (?), epidote, sericite and chlorite. Pyrite occurs locally as microveinlets and fine-grained disseminations with this alteration facies.

There is a well-developed gossanous zone capping the disseminated pyrite mineralization. This gossan forms an elongate east-west zone measuring approximately 3300 metres long by 800 metres wide.

The known mineralization, in order of abundance, includes pyrite, chalcopyrite, magnetite, hematite, molybdenite and digenite. Pyrite occurs as microveinlets and disseminations within the gossan zone. Its abundance varies from 0.5 to 10 per cent, and is directly proportional to the intensity of the fracturing and alteration. Chalcopyrite occurs in northerly trending veinlets, microveinlets, or, more commonly, as disseminations with pyrite, magnetite-hematite and gangue minerals of quartz and orthoclase. Digenite rims chalcopyrite grains where supergene mineralization occurs. Molybdenite has also been found to be spatially associated with the quartz-sericite-pyrite alteration zone as fracture fillings.

Drilling results show that there is a 10 to 20 metre leached cap over the known copper mineralization, and assay results show that beneath this cap the mineralization is enriched for a thickness of up to 30 metres (Assessment Report 19962). The deposit remains open in all lateral directions.

Preliminary estimates of reserves of the Kemess North deposit are 116,108,800 tonnes grading 0.19 per cent copper and 0.37 gram per tonne gold at a cutoff grade of 0.40 per cent copper equivalent (Northern Miner - January 20, 1992). Geological reserves are 75,363,682 tonnes grading 0.51 gram per tonne gold and 0.21 per cent copper (George Cross News Letter No. 213 (November 4), 1992).

Kemess Mines Inc. completed 12 holes totalling 4100 metres in 2000. The year 2000 drill program (incorporating previous drilling results) has defined a total of approximately 360 million tonnes grading 0.154 per cent copper and 0.299 gram per tonne gold (Northgate Exploration Ltd., News Release, January 22, 2000).

Northgate Exploration Ltd. completed a 16 hole, 8200 metre diamond-drill hole program in 2001 which has defined a significantly larger and higher grade inferred mineral resource. The inferred mineral resource is estimated to be 442 million tonnes grading 0.4 gram per tonne gold and 0.23 per cent copper using a gold equivalent cutoff grade of 0.6 gram per tonne; within this inferred resource is a higher grade core estimated to contain 170 million tonnes grading 0.5 gram per tonne gold and 0.29 per cent copper using a gold equivalent cutoff grade of 0.8 gram per tonne (Stockwatch - November, 14, 2001).

Northgate Exploration Ltd.'s 2002 drill program included drilling the Nugget porphyry target, located 1 kilometre west of the proposed Kemess North pit outline, at the Kemess East, located 750 metres southeast of Kemess North (Stockwatch, Northgate Exploration Ltd., September 17, 2002).

Northgate continued drilling in 2002 and intersected a deeper zone of mineralization in the Central Cirque area. A 206-metre intercept starting at 407 metres down-hole assayed 0.29 grams per tonne gold and 0.54 per cent copper. Drilling also occurred at the Nugget zone 1 kilometre to the west and the Kemess East, 750 metres southeast of Kemess North.

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STOCKWATCH Nov.15,16, 2001; Sept.17, Nov.22, 2002
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DATE CODED: 1985/07/24
DATE REVISED: 2001/03/20

CODED BY: GSB
REVISED BY: GP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 022**

NATIONAL MINERAL INVENTORY: 094E2 Pb1

NAME(S): **ATTYCELLEY**, ATTYCELLEY NO 1 GP, ATTYCELLEY NO 2 GP,
AUDREY WEST, AUDREY EAST, AUDRY,
AUDRY 1-2, KEM, KEM 6,
KEM 1-9

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:
LATITUDE: 57 05 32 N
LONGITUDE: 126 43 00 W
ELEVATION: 1640 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6329967
EASTING: 638349

COMMENTS: A quartz vein hosts galena, sphalerite, chalcopyrite and barite mineralization, located approximately 11 kilometres east of the northerly tip of Thutade Lake (Assessment Report 10113).

COMMODITIES: Silver Gold Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite
ASSOCIATED: Quartz Pyrite Barite
ALTERATION: Silica Pyrite Jarosite
ALTERATION TYPE: Silicific'n Pyrite Propylitic
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 350 x 3 Metres STRIKE/DIP: 275/ TREND/PLUNGE:
COMMENTS: A zone of quartz veining. Dates from other adularia-sericite type epithermal veins in the Toodoggone gold camp are Lower Jurassic (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Toodoggone	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Augite Porphyry Basalt
Dacite Crystal Lapilli Tuff
Dacite
Andesite Crystal Lapilli Tuff
Augite Crystal Tuff
Andesite
Ash Tuff
Dacite Breccia
Monzonite
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab

YEAR: 1990

COMMODITY	GRADE	
Silver	30.7000	Grams per tonne
Gold	0.0100	Grams per tonne
Copper	0.4070	Per cent
Lead	2.5000	Per cent
Zinc	3.4000	Per cent

COMMENTS: Sample Att-90-011, 1 of 13 samples taken from the west zone of the showing.

REFERENCE: Assessment Report 21059.

CAPSULE GEOLOGY

The Attycelley prospect is located 11 kilometres east of the northerly tip of Thutade Lake at the southern end of the Toodoggone gold camp. The Kem showing (094E 119) lies approximately 1 kilometre to the west. Smithers is located about 250 kilometres to the south. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Attycelley occurrence is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Lower Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Attycelley prospect is underlain by augite porphyry basalt, dacite and andesite crystal and lapilli tuffs and flows, and augite crystal tuffs and ash tuffs of the Takla Group. To the southwest and east lie dacite lapilli and crystal tuffs and breccias, and andesite crystal tuffs of the Toodoggone Formation. To the northeast, Toodoggone Formation volcanic rocks are interbedded with conglomerate, sandstone and siltstone. The Early Jurassic Kemess pluton, a monzonite intrusive body, outcrops to the northwest.

The Attycelley occurrence consists of a set of extremely large adularia-sericite type epithermal quartz veins which are partially exposed in a ridge top. The veins have a strike length of at least 350 metres. The apparent width of the veins is observed in exposures on the east and west slopes of the ridge. The south vein strikes 270 degrees and the north vein strikes 280 degrees. The width of the main vein is at least 3 metres. The veins consist of massive to medium-grained grey to white quartz with associated galena, sphalerite, chalcopryrite, pyrite and barite. Silicification of the wallrock associated with quartz veining is minor. A pyritic alteration zone up to 1 centimetre wide is locally observed along vein margins.

An assay of a grab sample from select vein material, sampled in 1982, yielded the following values; 2.65 per cent lead, 101.5 grams per tonne silver, 0.69 per cent zinc, 0.34 per cent copper and 0.035 gram per tonne gold (Assessment Report 10113). Extensive sampling was conducted on these veins during an exploration program in 1990. Results from sampling these veins indicated extensive anomalous mineralization in both quartz veins and host volcanic rocks. Sample Att-90-011, of shattered quartz vein material, assayed 30.70 grams per tonne silver, 0.01 gram per tonne gold, 3.40 per cent zinc, 2.50 per cent lead and 0.407 per cent copper (Assessment Report 21059). Sample Att-90-008, of host volcanics with jarosite, assayed 268.0 grams per tonne silver, 0.22 gram per tonne gold, 14.6 per cent lead, 2.55 per cent zinc and 0.433 per cent copper (Assessment Report 21059).

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GSC OF 306; 483
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GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER May 28, 1981; October 13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/01/21

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 023**

NATIONAL MINERAL INVENTORY: 094E6 Cu4

NAME(S): **ED**, ED 12, ED 1-14,
EHL, BELLE, MAGIC,
MAGIC 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 29 11 N
LONGITUDE: 127 05 36 W
ELEVATION: 1490 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6373135
EASTING: 614302

COMMENTS: The location is the approximate centre of the ED 12 claim within which massive pyrite with some chalcopyrite occurs in a small shear in volcanics (Assessment Report 2506). The showing is 1.5 kilometres west of Lower Belle Lake and 2.3 kilometres northwest of Mount Gordonia in the east-central part of the Toodoggone gold camp.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Massive
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Porphyritic Andesitic Tuff
Andesite
Basalt
Breccia
Gossan
Pyroclastic
Monzonite Dike
Syenite Dike

HOSTROCK COMMENTS: The Toodoggone Formation at this showing is undivided.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Greenschist
Zeolite

COMMENTS: Located in the east-central part of the Toodoggone gold camp.

CAPSULE GEOLOGY

The ED showing consists of a zone of massive pyrite with some chalcopyrite occurring in a small shear within volcanic rocks (Assessment Report 2506). The showing is 1.5 kilometres west of Lower Belle Lake and 2.3 kilometres northwest of Mount Gordonia in the east-central part of the Toodoggone gold camp.

The ED showing is underlain by green, porphyritic andesitic tuffs and other pyroclastics of the Lower Jurassic Toodoggone Formation (Hazelton Group). At this showing, the Toodoggone Formation is undivided. Monzonite and syenite dikes cut these volcanics. A major fault structure is inferred to run north-south along the Belle lakes valley. A second fault, striking west-northwest, separates Toodoggone volcanics in the south from Takla Group volcanics in the north. These consist of massive, aphanitic to porphyritic basalts and andesites with minor breccia. Where porphyritic, phenocrysts are mostly pyroxene. For a detailed description of the regional geological setting refer to East Ridge occurrence (094E 179).

Mineralization at the ED showing consists of a stringer of massive pyrite with some chalcopyrite occurring in a small shear (Assessment Report 2506). This was reported in 1970 and subsequent property exploration does not provide additional information. In 1986, six soil samples taken from the vicinity of the ED showing yielded silver values of greater than or equal to 1.0 gram per tonne

CAPSULE GEOLOGY

silver (Assessment Report 15070). A rock sample taken in the same year, 500 metres northeast from the showing, analysed 0.7 gram per tonne silver and 0.003 gram per tonne gold (Assessment Report 15070). Monzonite and syenite dikes on the west side of Lower Belle Lake forms a prominent alteration zone. The zone is marked by a strong gossan with 2 to 4 per cent disseminated pyrite with analyses yielding less than 0.1 per cent copper (Assessment Report 15070).

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W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG p. 1, March 1988
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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DATE CODED: 1985/07/24
DATE REVISED: 1992/11/12

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 024**

NATIONAL MINERAL INVENTORY: 094E7 Cu3

NAME(S): **PIL**, PIL 4

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 17 40 N
LONGITUDE: 126 47 32 W
ELEVATION: 1320 Metres

NORTHING: 6352320
EASTING: 633043

LOCATION ACCURACY: Within 500M

COMMENTS: The location of a copper showing consisting of disseminated chalcopyrite in altered granite. The showing is located on the east side of Jock Creek, 5.5 kilometres west of The Pillar and south of the Toodoggone River (Assessment Report 1888). Smithers is 280 kilometres to the south.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Chlorite Sericite Pyrite
ALTERATION TYPE: Propylitic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic Unknown	Hazelton	Toodoggone	Unnamed/Unknown Informal

LITHOLOGY: Granite
Quartz Monzonite
Andesite Flow
Andesite
Pyroclastic
Andesite Tuff
Argillite
Quartz Feldspar Porphyry Dike

HOSTROCK COMMENTS: The Toodoggone Formation is undivided on a regional scale at this location (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist Zeolite

COMMENTS: Located in the south-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N
CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY: Copper
GRADE: 0.1000 Per cent
YEAR: 1969

COMMENTS: This was a visual estimate. A grab sample of similar style mineralization yielded 0.3 per cent copper.

REFERENCE: Assessment Report 1888.

CAPSULE GEOLOGY

The Pil showing is a copper showing consisting of disseminated chalcopyrite in altered granite, located on the east side of Jock Creek, 5.5 kilometres west of The Pillar and south of the Toodoggone River (Assessment Report 1888). Smithers is 280 kilometres to the south.

The Pil showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and

CAPSULE GEOLOGY

to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The hostrock of the Pil showing is an elliptical, granite to quartz monzonite stock about 2.5 kilometres long (north-south) by 1.25 kilometres wide. This stock intrudes andesite flows and pyroclastics, mainly tuffs, and minor argillite of the Toodoggone Formation. The Toodoggone Formation is also intruded by quartz feldspar porphyry dikes and is undifferentiated on a regional scale at this location (Bulletin 86).

The volcanic rocks are highly fractured, altered and impregnated with pyrite near the contacts of the intrusion. Alteration of the granite consists of chlorite and sericite developed locally and intense fracturing is generally absent.

Mineralization at the Pil showing consists of local disseminations of chalcopyrite within altered portions of the granite intrusion. The grade was visually estimated to be 0.1 per cent copper (Assessment Report 1888). Mineralization of this nature also occurs within the quartz feldspar porphyry where a grab sample analysed 0.3 per cent copper (Assessment Report 1888).

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W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
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DATE CODED: 1985/07/24
DATE REVISED: 1992/11/15

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 025**

NATIONAL MINERAL INVENTORY: 094E2 Cu5

NAME(S): **KEMESS WEST**, RAT, RAT 1-2,
 RAT 1-20, DUNCAN, DUNCAN 3-4,
 RON, RON 11

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094E02W
 BC MAP:
 LATITUDE: 57 01 41 N
 LONGITUDE: 126 47 23 W
 ELEVATION: 1520 Metres
 LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
 UTM ZONE: 09 (NAD 83)
 NORTHING: 6322675
 EASTING: 634153

COMMENTS: A 1-metre wide shear zone hosts sphalerite, pyrite, chalcopyrite, galena and manganese oxides in a quartz-carbonate gangue, located 11 kilometres southeast of the Finlay River (Assessment Report 18442).

COMMODITIES: Silver Zinc Copper Lead Gold

MINERALS

SIGNIFICANT: Sphalerite Chalcopyrite Galena Pyrite
 ASSOCIATED: Quartz Carbonate
 COMMENTS: An unknown manganese oxide has been identified in the quartz-carbonate shear.
 ALTERATION TYPE: Oxidation Leaching
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein Disseminated
 CLASSIFICATION: Hydrothermal Epigenetic
 DIMENSION: 1 Metres STRIKE/DIP: 150/90 TREND/PLUNGE:
 COMMENTS: Shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	Kemess Pluton
Lower Jurassic			
ISOTOPIC AGE: 207 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Hornblende			

LITHOLOGY: Augite Andesite Flow
 Andesite
 Cherty Sediment/Sedimentary
 Quartz Monzonite
 Quartz Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
 TERRANE: Stikine
 METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Zeolite
 COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1989
SAMPLE TYPE: Grab	
<u>COMMODITY</u>	<u>GRADE</u>
Silver	252.5000 Grams per tonne
Gold	2.0000 Grams per tonne
Copper	0.7139 Per cent
Lead	0.1898 Per cent
Zinc	9.9999 Per cent

COMMENTS: Assay is from one of four samples taken from the shear zone.
 REFERENCE: Assessment Report 18442.

CAPSULE GEOLOGY

The Kemess property, located 11 kilometres southeast of the Finlay River, is the most intensely explored porphyry copper-gold prospect in the Toodoggone area. To date, four zones of porphyry copper-gold mineralization have been identified on the Kemess property. The Kemess North (094E 021) and West zones (formerly the Kemess and Rat properties respectively) were initially explored in

CAPSULE GEOLOGY

the late 1960s and early 1970s.

The Kemess West showing is located at the south end of Duncan Lake some 260 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Lower Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata. A major structural zone associated with the Saunders Creek regional fault cuts diagonally through the area, trending northwest.

The Kemess West showing and most of the surrounding area is underlain by augite andesite flows and minor amounts of cherty sediments of the Takla Group. The Early Jurassic Kemess pluton is exposed to the north of the Kemess West showing and intrudes Takla lithologies. The composition of these exposures is quartz monzonite. This intrusion is bordered by a quartz feldspar porphyry intrusion and a marginal quartzose zone, which seems to be a hybrid zone between the porphyry and cherty sediments of the Takla Group.

Mineralization at the showing consists of 5 per cent black sphalerite, 1 per cent disseminated pyrite, trace chalcopyrite and galena and weathered manganese oxides in a quartz-carbonate gangue within a 1-metre wide shear zone. Assay results of material from this shear zone were 252.5 grams per tonne silver, 9.9 per cent zinc, 0.7 per cent copper, 0.18 per cent lead and 2.0 grams per tonne gold (Assessment Report 18442).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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- IPDM Nov/Dec 1983
- MIN REV September/October, 1982; July/August, 1986
- N MINER October 13, 1986
- N MINER MAG p. 1, March 1988
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DATE CODED: 1985/07/24
DATE REVISED: 1992/01/18

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 026**

NATIONAL MINERAL INVENTORY: 094E6 Au2

NAME(S): **BAKER**, BAKER MINE, CHAPPELLE,
CHAPPELLE (BAKER), A VEIN, B VEIN,
MULTINATIONAL B, WEST CIRQUE, NEW ZONE,
SABLE, RIDGE, BECK

STATUS: Past Producer Open Pit Underground
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 17 07 N
LONGITUDE: 127 06 38 W
ELEVATION: 1722 Metres

NORTHING: 6350723
EASTING: 613891

LOCATION ACCURACY: Within 500M

COMMENTS: Open pit, 4.5 kilometres south-southwest from the head of Saunders
Creek, 10.5 kilometres south of the Toadoggone River, 280 kilometres
north of Smithers (Property File - Barr, 1978). See also Shasta
(094E 050).

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS

SIGNIFICANT: Pyrite Electrum Argentite Sphalerite Chalcocopyrite
Gold Bornite Covellite Chalcocite Galena
Polybasite Stromeyerite Tetrahedrite

COMMENTS: Chalcopyrite and sphalerite from 3 to greater than 15 per cent. Rare
galena, polybasite and stromeyerite.

ASSOCIATED: Quartz Carbonate
ALTERATION: Silica Sericite Clay Carbonate Epidote
Hematite Jarosite Goethite

COMMENTS: Pyrite, epidote, tremolite, chlorite and calcite comprise propylitic
altered country rocks (Bulletin 86).

ALTERATION TYPE: Silicific'n Sericitic Argillic Oxidation Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Cylindrical

MODIFIER: Faulted
DIMENSION: 250 x 200 x 2 Metres STRIKE/DIP: 055/90N TREND/PLUNGE:
COMMENTS: B vein structure; widths range from 2.4 to 7.6 metres; steep dips.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Toadoggone	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Augite Porphyritic Andesite
Augite Andesite
Dacite
Feldspar Porphyritic Andesite
Pyroclastic Breccia
Siltstone
Calcite Marble
Quartz Feldspar Porphyry
Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine

INVENTORY

ORE ZONE: B

REPORT ON: Y

CATEGORY:	Indicated	YEAR:	1988
QUANTITY:	45355 Tonnes		
COMMODITY		GRADE	
Silver		176.8800	Grams per tonne
Gold		19.5300	Grams per tonne

COMMENTS: About 9978 tonnes of ore of greater than 17 grams per tonne gold has been mined (T. Schroeter, personal communication, 1992). Additional was mined in 1996 and 1997.

REFERENCE: George Cross News Letter No. 213 (November 4), 1988.

CAPSULE GEOLOGY

A small window of Upper Triassic Takla (Stuhini) Group volcanic rocks are intruded by granitic stocks of the Early Jurassic Black Lake Suite and overlain unconformably by Jurassic and younger volcanic and sedimentary rocks. The oldest rocks in the area are occasional wedges of crystalline limestone, up to 150 metres or more thick, which are part of the Permian Asitka Group. To the north and east, the Takla Group rocks are unconformably overlain by gently dipping porphyritic flows and fragmental rocks of the Lower Jurassic Toodoggone Formation (Hazelton Group). To the west, the Toodoggone volcanics are unconformably overlain by Upper Cretaceous-Eocene (?) Sustut Group sedimentary rocks. The rocks in the area have been subjected to extensive normal block faulting from Jurassic to Tertiary time, and by thrusting of the Asitka Group rocks over the Takla Group rocks during the Middle Jurassic.

Four principal rock units of the Takla Group underlie the Baker property: augite porphyritic andesite, fine-grained andesite, pyroclastic breccia and feldspar porphyritic andesite. A dacite unit has been recognized and is approximately 10 to 20 metres thick. The oldest and most prevalent unit is the augite porphyritic andesite. With the exception of the dacite unit, the Takla Group rocks are all epidotized. The augite porphyritic andesite, fine-grained andesite and dacite are commonly silicified, particularly in the vicinity of quartz veins. A thrust faulted block of calcite marble of the Asitka Group occurs immediately to the west of the gold-silver bearing A vein. The block is inferred to have a minimum thickness of 150 metres. Limited observations indicate that the volcanic units strike north in the southwest, and northeast in the east, with steep to moderate dips. As exposed, the sequence appears to represent part of a northeast striking and southwest-plunging anticline.

The Takla Group rocks are intruded by granitic stocks of the Black Lake Suite, the largest of these, the Black Lake stock, extends 9 kilometres southeast from the Baker property. Its composition varies from granodiorite to quartz monzonite. Radiometric potassium-argon dates obtained by the Geological Survey of Canada on hornblende from this pluton indicate an emplacement age of 186 Ma. Another pair yielded ages of 189 Ma and 200 Ma on biotite and hornblende respectively (Property File - Barr, 1978). Two small syenomonzonite intrusions occur immediately to the north of the Black Lake stock near the A vein. Highly altered quartz feldspar porphyry which appears to be a late phase of the syenomonzonite intrusions, occurs immediately to the north of the A vein. The main portion of this porphyry unit lies at the fault contact between Asitka Group and Takla Group rocks near the western end of the A vein. Dike-like apophyses of this body, varying from 1 to 30 metres in thickness, subparallel and intersect the northeast extension of the A vein.

At the Baker mine property, seven quartz vein systems occur cutting Takla Group rocks; two have been mined. The veins are the A, B, C, D, North Quartz, West Chappelle and North Black Gossan and occur within an area of 2500 metres. They occur within an uplifted block of brightly iron-stained basalt and andesite flows of the Takla Group. The veins occupy two principal trends: northeast and east-southeast. Wallrocks are variably silicified and altered to sericite, clay minerals and carbonate with intensity increasing with proximity to vein structures.

The main production at the Baker mine was from the A vein, a fault-controlled quartz vein system composed of two or more subparallel veins which strike northeast and dip from 80 degrees southeast to approximately 70 degrees northwest. The quartz vein system has been traced for a strike length of 435 metres and across a width varying from 10 to 70 metres. Individual veins within the system vary from 0.5 to 10 metres in width. Drilling indicates that the vein system persists for at least 150 metres vertically from surface. The A vein is the most southeasterly of the two principal veins in the system and, where both veins have been intersected in drillholes, they generally lie about 15 metres apart. Throughout most of its length, the A vein lies within altered Takla Group augite porphyritic andesite and dacite, which are intensely silicified on

CAPSULE GEOLOGY

vein walls. At intervals, it lies partly along a contact between quartz feldspar porphyry on the northwest and Takla Group volcanic rocks on the southeast. Near its southwest limit, a lobe of quartz feldspar porphyry extends northwest along the contact between a small stock of syenomonzonite and wedge of Asitka Group marble.

The A vein system is cut by numerous crossfaults which offset portions of individual veins, commonly for 1 to 15 metres and in one instance, for an inferred plan offset of 30 metres in a small graben structure. Most of the faults are northwest striking normal and reverse faults dipping to the northeast, and dip-slip strike faults dipping at shallow angles, generally to the southeast. Wallrocks, particularly in the hangingwall, are badly broken. The quartz vein is broken into segments less than 30 metres in length.

A variety of quartz vein textures and crosscutting relationships indicate a complex history of veining with multiple depositional stages. Much of the quartz is massive and drusy, whereas a distinctive earlier ribboned variety is common, particularly near vein contacts. The quartz varies in colour from white to grey to dark grey.

Gold-silver values are generally associated with highly fractured and occasionally brecciated white to grey, vuggy quartz veins containing 1 to 10 per cent pyrite, and to a lesser extent occur in silicified wallrock. Xenoliths of altered andesite and dacite frequently occur in the veins. The only other common gangue mineral is carbonate, which fills fractures.

Higher grade mineralization is associated with grey quartz, which occasionally contains visible argentite, commonly associated with disseminated grains of pyrite, chalcopyrite and very minor sphalerite. High grade gold-silver values occasionally occur in narrow (1-5 centimetre) crosscutting silicified shears. Visible gold is rare. Significant precious metals were found to be contained in a flat-lying shoot 200 metres in length by 3 metres wide and extending to a depth of 40 metres below surface.

Polished section, x-ray diffraction, and electron microprobe studies indicate that pyrite is the dominant mineral, constituting about 90 per cent of sulphide mineralization. It occurs as euhedral grains and includes blebs of chalcopyrite, electrum, argentite, bornite and sphalerite. Sphalerite constitutes about 3 per cent of the sulphides and is commonly enclosed in pyrite. Argentite is commonly interstitial between pyrite, chalcopyrite and gold. Electrum is frequently associated with argentite. The form of occurrence of gold is similar to that of argentite and electrum. Bornite occurs as blebs in pyrite or with chalcopyrite. Galena occurs as rare discrete disseminated grains. Chalcocite forms thick coatings on chalcopyrite and covellite forms a thin coating on both chalcocite and chalcopyrite in the oxidized part of the A vein. Polybasite and stromeyerite are rare constituents.

Surface oxidation in the A vein area extends to a depth of 5 metres or more below surface and is reflected by the presence of hematite, jarosite and goethite as pyrite alteration products in vugs and fractures, particularly near surface.

A production decision was made in 1979 to mine the A vein system and the Baker mine went on stream in May, 1981 with operations continuing until Nov. 30, 1983. DuPont of Canada Exploration Ltd. was the operator. Remaining unclassified reserves are 9070 tonnes grading 8.47 grams per tonne gold and 159.4 grams per tonne silver (Open File 1992-1).

The B (Multinational B) zone or B vein system is 365 metres northeast of, and on strike with the A vein. The B zone is similar in style and structure to the A vein and has been traced over a northeast strike length of more than 250 metres and to a depth of nearly 200 metres. Drilling has defined a vertically to steeply northwest dipping quartz (carbonate) vein structure that strikes 055 degrees. True widths of the structure vary from 2.4 to 7.6 metres. B zone reserves are 45,355 tonnes, grading 19.53 grams per tonne gold and 176.88 grams per tonne silver (George Cross News Letter No. 213 (November 4), 1988).

Gold and silver are contained within a steeply northeast-plunging shoot within the plane of the vein. The surface expression of the B zone is a network of narrow quartz veins and veinlets having an overall east-southeast strike with moderate northeast dips. These are interpreted as being part of the hangingwall alteration zone which also features moderate to intense quartz-carbonate-sericite-clay minerals alteration of the volcanic hostrocks. Precious metal values within the alteration zone are low. Takla Group rocks at the B zone comprise augite porphyritic andesite, the most prevalent unit. Dacite, in part an alteration of andesite, but also a discrete unit, is variably silicified. Intravolcanic sediments, in the form of banded siltstones occur within the sequence. All rocks contain

CAPSULE GEOLOGY

disseminated pyrite and are variably altered, epidote being prominent within the andesitic unit. Dacites within the hangingwall alteration zone are transformed to a creamy white rock featuring abundant sericite, carbonate and clay mineral alteration with numerous quartz veinlets and disseminated pyrite. Limy siltstones locally feature skarn alteration in the form of garnet, epidote and considerable pyrite.

Takla Group rocks are intruded by coarse-grained quartz feldspar porphyry and equigranular finer grained pink felsic units. A quartz feldspar porphyry dike apparently marks the southwest limits of the B zone. The intrusive rocks contain some quartz veins.

Structural complexity of the B zone is in the form of fault offsets which increases with depth and along strike to the northeast. Vein contacts are commonly marked by gouge zones.

At least three stages of quartz veining are evident within the B zone structure. Earliest stages include a drusy grey variety with small carbonate patches which is commonly fractured and brecciated and healed by a creamy white chalcedonic quartz and by later quartz-carbonate stringers. Pyrite is a common constituent and chalcopyrite is a good indicator of gold mineralization - better gold grades have a direct correlation with copper values. Galena and sphalerite are also common vein constituents but are more prevalent in gently dipping vein structures in the hangingwall.

The North Quartz zone is 1050 metres northeast of the A vein and consists of steeply dipping quartz veins with west-northwest strikes exposed over an area of 100 by 300 metres at the head of a cirque. Drilling in 1987 intersected narrow (less than 1 metre) quartz veins containing disseminated pyrite, galena and sphalerite.

Both C and D veins are partly exposed on steep mountain slopes. The C vein is located 750 metres northwest of A vein, and D vein is 650 metres north-northeast of A vein. Chip samples from C vein assayed up to 1.3 grams per tonne gold and 27 grams per tonne silver across a width of 1.6 metres. The D vein is essentially barren of precious metal content (Property File - Barr, 1978).

At the West Chappelle vein system, 1400 metres west-southwest of the A vein, a shallow drillhole assayed 1.3 grams per tonne gold and 16.8 grams per tonne silver over a core length of 1.2 metres (Property File - Barr, 1978).

Sampling of a narrow quartz vein at the North Black Gossan area yielded low gold-silver values.

To mid-December 1991, Sable Resources had mined approximately 9978 tonnes of material of greater than 17 grams per tonne gold from the B zone deposit area but was forced to cease operations in November 1991 due to poor underground conditions (T. Schroeter, personal communication, 1992). This ore is included with the Shasta Production.

Ore from the Shasta mine (094E 050) was transported to the Baker mill for processing.

Sable Resources plans to develop (1996) a small open pit on the Multinational B zone (B vein). They processed approximately 2267 tonnes of ore this year, but were unable to complete their program due to early onset of winter. The company plans to spend a minimum of \$150,000 on exploration next year and an additional \$100,000 on reclamation (B. Lane, personal communication, 1996). The company states that approximately 725 to 907 tonnes of ore grading 34.2 grams per tonne gold equivalent is 'available' for extraction from the B vein open pit. In 1996, Sable produced 52,720 grams of gold, 507,267 grams of silver and 8600 kilograms of copper from 2337 tonnes of ore from underground mining on the B vein. In 1997, the company milled about 1600 tonnes of ore from the B vein open pit and re-processed about 545 tonnes of tailings, yielding 35,085 grams of gold, 220,337 grams of silver and 4476 kilograms of copper (Information Circular 1998-1, page 22 and T. Schroeter). This ore has been mined out via a surface cut and re-processing of old mill tailings (T. Schroeter, personal communication, 1997).

Sable Resources drilled 10 holes in 1998 and explored in 1999. New discoveries include the Ridge zone, located northeast of the mined out A vein, and Beck vein. The Beck vein is 1.5 metres wide and has been exposed for about 30 metres. It appears to be associated with altered quartz feldspar porphyry generally believed to be the source of vein A.

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FIELD CHECK: N
FIELD CHECK: Y

CAPSULE GEOLOGY

The Castle Mountain showing is located approximately 1.2 kilometres southwest of the former Baker mine (094E 026), some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Castle Mountain showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata. The Castle Mountain showing is underlain by limestone of the Asitka Group and volcanic rocks of the Takla Group. Dark green augite plagioclase pyritic andesite to basalt flows with lesser interbedded siltstone, tuffaceous sediments and chert comprise lithologies of the Takla Group. These lithologies have in turn been intruded by Early Jurassic granodiorite to quartz monzonite of the Black Lake stock.

The intrusion of the Black Lake stock has led to the development of skarn mineralization at the Castle Mountain showing, which was first recognized and explored by Cominco in the early 1930s. Sphalerite, galena, chalcopyrite, magnetite, pyrite and pyrrhotite mineralization is sporadically distributed in pods rarely more than 1 to 2 metres long, but are traceable over a strike length of 304 to 426 metres in a zone up to 3 metres thick. Associated skarn mineralogy includes green amphibole, garnet and epidote.

Silver content is erratic and ranges up to 1714.28 grams per tonne but averages closer to 68.57 to 102.85 grams per tonne; gold values are generally low. The highest values from assays were 9.25 grams per tonne gold, 1904.91 grams per tonne silver and 76.7 per cent lead from a small skarn lens on the Castle Mountain 3 Crown grant. Another small lens on the Castle Mountain 4 Crown grant yielded trace gold, 47.99 grams per tonne silver, 32.5 per cent zinc, 3.9 per cent lead and 0.79 per cent copper (Assessment Report 14979).

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 654
REPORT: RGEN0100

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DATE CODED: 1985/07/24
DATE REVISED: 1992/03/11

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **PARK, PARK 1-5, BILL,
BILL 1-3, T-BIRD, T-BIRD 1-8**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E13W
BC MAP:

LATITUDE: 57 48 39 N
LONGITUDE: 127 46 13 W
ELEVATION: 1800 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Trench 5, exposing a distinctive quartz sinter zone in the central part of a gossan. The Park showing is located 4.5 kilometres west of Park Creek and 18.0 kilometres north-northwest of Spruce Hill (Assessment Report 11148). Dease Lake is 130 kilometres to the northwest.

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

NORTHING: 6408314
EASTING: 573068

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite Magnetite

COMMENTS: Disseminated pyrite is present in the silicified rock band. Massive magnetite is present two metres below surface in a distinctive quartz sinter (Assessment Report 11148).

ASSOCIATED: Quartz

ALTERATION: Silica Pyrite Clay

COMMENTS: Iron-manganese oxides cement quartz breccia fragments in a distinctive quartz sinter (Assessment Report 11148).

ALTERATION TYPE: Silicific'n Argillic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive

CLASSIFICATION: Epigenetic Hydrothermal

TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Tabular

MODIFIER: Faulted

DIMENSION: 150 x 10 Metres STRIKE/DIP:

COMMENTS: A highly silicified rock band averages 10 to 15 metres thickness over a strike length of greater than 150 metres, in a 200 by 200 metre gossan. A quartz sinter zone with massive magnetite is also present.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP
Upper Triassic Takla
Paleozoic Unnamed/Unknown Group
Lower Jurassic

FORMATION
Unnamed/Unknown Formation
Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER
Black Lake Suite

LITHOLOGY: Andesite
Siliceous Andesite
Dacite
Plagioclase Porphyritic Andesite
Plagioclase Porphyritic Dacite
Chert
Diorite
Siliceous Rock
Gossan
Sinter

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Spatsizi Plateau

RELATIONSHIP:

GRADE: Greenschist

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1982

COMMODITY	GRADE	
Silver	3.9000	Grams per tonne
Gold	2.9000	Grams per tonne

COMMENTS: Sample 1830E, a 2-metre chip sample from Trench 5.
REFERENCE: Assessment Report 11148.

CAPSULE GEOLOGY

The Park showing, exposing a distinctive quartz sinter zone in the central part of a gossan, is located 4.5 kilometres west of Park Creek and 18.0 kilometres north-northwest of Spruce Hill (Assessment Report 11148). Dease Lake is 130 kilometres to the northwest.

The Park showing lies at the eastern edge of the Intermontane Belt near the Kutcho fault, marking the boundary with rocks of the Omineca Belt. The oldest rock in the area are a sequence of lower greenschist grade metamorphosed sedimentary and volcanic rocks correlated to the Asitka Group found elsewhere, based on lithological similarities (Geological Survey of Canada Open File 483). Fossil evidence from later regional mapping gives a Mississippian age for at least part of the sequence (Geological Survey of Canada Paper 80-1B, pages 207-211). A tentative Devonian to Permian age is assigned to these rocks. Five stratigraphic units have been recognized, and are, from oldest to youngest, feldspathic chlorite schist; phyllite, sericite and calcareous sericite schist; massive rhyolite, chert and sericite schist; carbonate; and upper feldspathic chlorite schist. The rocks are complexly folded and have undergone at least two phases of deformation. They are predominantly calcalkaline with minor alkaline members. The sequence is similar in many respects to rocks of the Kutcho Formation in the southeastern corner of the Cry lake map area. To the south of the Stikine River, Lower Jurassic Toodoggone Formation (Hazelton Group) volcanic rocks and Upper Cretaceous sedimentary rocks of the Sustut Group dominate. North and east of the Stikine River valley, two Early Jurassic plutonic bodies of the Black Lake Suite intrude these rocks. One is quartz monzonite in composition and the other is diorite. Small zones and pendants of Upper Triassic Takla Group are found to the east and north of the Toodoggone Formation rocks.

Locally, the Park showing is underlain by andesites and dacites of the Takla Group which show varying degrees of silicification and pyritization. These rocks are fine to medium grained and, in part, plagioclase porphyritic. Quartz stringers and veins, at variable attitudes, are abundant. Up to 10 per cent disseminated pyrite has resulted in a significant gossan, traceable for 500 to 700 metres and trending east-northeast. At least two northwesterly striking faults offset the gossanous zone. Minor amounts of chert of the Asitka Group are also found at the Park showing. Diorite, intruding both the volcanics and the chert, also occurs at the Park showing.

Mineralization at the Park showing consists of a zone of highly silicified rock band in a 200 by 200 metre gossan. The zone appears to average 10 to 15 metres thickness over a strike length greater than 150 metres. The core of the zone consists of quartz with minor disseminated pyrite cubes. Outward from this core, the rocks grade into a silicified andesite. Exposed at surface in the central part of the gossan is a distinctive sinter zone. The zone is made up of a breccia, composed of angular, quartz fragments up to 1 metre across cemented by iron-manganese oxide. Two metres below the surface, a zone of highly weathered massive magnetite occurs. Trenching has exposed this zone over 4 metres in one trench.

A total of eleven trenches were dug at the Park showing. The best assay results were from Trenches 5 and 11. Several chip samples taken from Trench 5 yielded anomalous gold and silver from orange clay and iron-manganese alteration. Sample 1832E analysed 1 gram per tonne gold over 2 metres, sample 1831E analysed 4.0 grams per tonne silver over 2 metres and sample 1830E analysed 2.9 grams per tonne gold and 3.9 grams per tonne silver (Assessment Report 11148).

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MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

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105-108
GSC MAP 14-1973

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DATE REVISED: 1992/12/15

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 029**

NATIONAL MINERAL INVENTORY: 094E7 Cu4

NAME(S): **THEBAN**, THEBAN 1-40

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 18 46 N
LONGITUDE: 126 57 33 W
ELEVATION: 1700 Metres

NORTHING: 6354047
EASTING: 622924

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample R471, taken from copper mineralization along the contact between monzonite porphyry and Toodoggone Formation volcanics. The showing is 5.0 kilometres northwest of The Pillar and 10 kilometres due south of Toodoggone Lake (Assessment Report 2082). The showing is 280 kilometres north of Smithers.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Epidote
ALTERATION: Malachite Chlorite Sericite Clay Argillic Oxidation
ALTERATION TYPE: Propylitic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Jurassic	Hazleton	Toodoggone	Unnamed/Unknown Informal

LITHOLOGY: Porphyritic Monzonite
Syenite
Diorite
Biotite Hornblende Granodiorite
Quartz Monzonite
Quartz Feldspar Porphyry Dike
Dike
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist
Zeolite

COMMENTS: Located in the south-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N
CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
COMMODITY: Copper
GRADE: 0.1200 Per cent
YEAR: 1969

COMMENTS: Channel sample taken over 15.25 metres from a trench.
REFERENCE: Assessment Report 2082.

CAPSULE GEOLOGY

The Theban showing is located 5.0 kilometres northwest of The Pillar and 10 kilometres due south of Toodoggone Lake (Assessment Report 2082). The showing is 280 kilometres north of Smithers. The Theban showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics

CAPSULE GEOLOGY

have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Theban showing is hosted within a northwest trending, lens-shaped intrusive complex of Early to Middle Jurassic age consisting of equigranular biotite, hornblende granodiorite to quartz monzonite and rare diorite (Bulletin 86). This intrusive complex is enveloped by volcanics of the Toodoggone Formation; the volcanics to the east are assigned predominantly to the Metsantan Member and those to the west are undivided. The intrusive phases hosting the Theban showing are equigranular and porphyritic monzonite, syenite and diorite. Numerous quartz, feldspar porphyry and trap dikes crosscut volcanics and the main intrusive phases. Within the intrusive complex, the syenite appears to be the oldest followed by diorite and finally monzonite.

The intrusive complex is conspicuously strongly fractured and permeated with disseminated pyrite. Most of the biotite and hornblende in these rocks has been altered to chlorite. Sericite and clay alteration are also evident but their distribution is erratic.

Chalcopyrite is localized in narrow, quartz-epidote stringers and hairline fractures, mainly within siliceous zones and at the contacts between intrusive phases and with tuffs of the Toodoggone Formation. The Theban showing is of the latter type. Malachite is more prevalent at the surface than chalcopyrite. Trenching and sampling was conducted over 15.25 metres at the Theban showing, yielding 0.12 per cent copper (Assessment Report 2082).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
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DATE CODED: 1985/07/24
DATE REVISED: 1992/11/14

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 030**

NATIONAL MINERAL INVENTORY: 094E14 Cu2

NAME(S): **TK 43**, TK, TK 1-88

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E14E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 56 22 N
LONGITUDE: 127 12 29 W
ELEVATION: 2000 Metres

NORTHING: 6423375
EASTING: 606092

LOCATION ACCURACY: Within 500M

COMMENTS: The location of a quartz vein with bornite and malachite, one of several copper occurrences on the former TK claim group. The TK 43 showing is located 3.5 kilometres west of Frog River and east of Lunar Creek, 16.0 kilometres north of the confluence of the Frog River with Geese Creek (Assessment Report 1674). Dease Lake is 135 kilometres to the northwest.

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Chalcocite Molybdenite
COMMENTS: Significant minerals are variable and dependent on the mode of occurrence. Bornite is the most widely distributed.

ASSOCIATED: Quartz
ALTERATION: Malachite

ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Irregular

DIMENSION: 2 Metres STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: The best copper showing is an irregular quartz vein, 30 to 240 centimetres wide, horsetailing at one end.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Unnamed/Unknown Group	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Triassic-Jurassic			

LITHOLOGY: Granite
Granodiorite
Chlorite Schist
Sericite Schist
Biotite Schist
Pegmatite Dike
Felsite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Cassiar Mountains

RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1968

COMMODITY
Copper
Molybdenum

GRADE	
10.8100	Per cent
0.0100	Per cent

COMMENTS: A pick sample from location J.
REFERENCE: Assessment Report 1674.

CAPSULE GEOLOGY

The TK 43 showing, consisting of a quartz vein with bornite and malachite and several other copper occurrences on the former TK claim group, is located 3.5 kilometres west of Frog River and east of Lunar Creek, 16.0 kilometres north of the confluence of the Frog River with Geese Creek (Assessment Report 1674). Dease Lake is 135 kilometres to the northwest.

CAPSULE GEOLOGY

The TK 43 showing lies on the western edge of the Omineca Belt near the Kutcho fault, marking the boundary with rocks of the Intermontane Belt. The showing is underlain by an unnamed Late Triassic to Early Jurassic granite to granodiorite pluton. Minor roof pendants of metavolcanic and metasedimentary rocks occur near the TK 43 showing within this plutonic suite. Early regional mapping correlated these rocks with the Permian Asitka Group based on lithological similarities (Geological Survey of Canada Open File 483). Fossil evidence from later regional mapping gives a Mississippian age for at least part of the sequence (Geological Survey of Canada Paper 80-1B, pages 207-211). A tentative age of Devonian to Permian is given to these rocks. Five stratigraphic units have been recognized, and are, from oldest to youngest; feldspathic chlorite schist; phyllite, sericite and calcareous sericite schist; massive rhyolite, chert and sericite schist; carbonate; and upper feldspathic chlorite schist. The rocks are complexly folded and have undergone at least two phases of deformation. They are predominantly calcalkaline with minor alkaline members. The sequence is similar in many respects to rocks of the Kutcho Formation in the southeastern corner of the Cry lake map area.

At the TK 43 showing, numerous copper occurrences are found in a granite to granodiorite pluton. These rocks are massive, poorly fractured, blocky and frequently host pegmatitic dikes, ranging up to 60 centimetres wide and composed of feldspar, quartz, biotite, muscovite and magnetite. Some pegmatites contain crystals up to 5 centimetres. Fractures in the granite and granodiorite have been infilled with finer grained compositional equivalents. Nearby metamorphic rocks are composed of quartzite, and chlorite, sericite and biotite schists. Inclination of the metamorphic-intrusive contact decreases from vertical in the west to 30 degrees south in the east near the TK 43 showing. Schistosity is parallel to the attitude of the contact. Evidence suggests that the metamorphic rocks were intruded by the granite to granodiorite pluton.

The TK 43 showing consists of a number of copper showings, composed of bornite, chalcopyrite, chalcocite, and copper carbonate occurring independently of molybdenite. Bornite is the most widely distributed copper sulphide. Modes of occurrence are: disseminated infrequent patches of a few square feet in the intrusion, as blebs in quartz veins and pegmatite and felsite dikes, as narrow fracture fillings and along metamorphic contacts.

The best grades obtained at the TK 43 showing was from a quartz vein, varying from 30 to 240 centimetres width, with bornite and malachite. The vein spreads into a horsetail and pinches out in 7.6 metres. A pick sample from this vein assayed 10.81 per cent copper and 0.01 per cent molybdenum (Assessment Report 1674).

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- GSC BULL 12; 270; 376
- GSC OF 306; 483
- GSC P 71-1A, pp. 23-26; 72-1A, pp. 26-29; pp. 29-32; 74-1A, pp. 13-16; 76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246; 80-1A, p. 348; *80-1B, pp. 207-211; 83-1A, pp. 221-227; 84-1A, pp. 105-108
- GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/17

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 031**

NATIONAL MINERAL INVENTORY: 094E6 Pb3

NAME(S): **MOOSE 1**, MOOSE-82 GROUP, MOOSE,
MOOSE 1-3, BULL MOOSE, WAS #1,
CALF MOOSE, HORN 2 FRACTION, SCREE,
SCREE 1-3, GAS, GAS 2

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 28 50 N
LONGITUDE: 127 13 38 W
ELEVATION: 1450 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6372268
EASTING: 606293

COMMENTS: The location of drillhole 85-M-6, intersecting silver, zinc and lead mineralization hosted in a quartz-amethyst banded and/or breccia zone, approximately 18 kilometres north-northwest of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 13961).

COMMODITIES: Silver Gold Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Acanthite
ASSOCIATED: Quartz Amethyst Barite Pyrite
ALTERATION: Chlorite Epidote Sericite Carbonate Pyrite
ALTERATION TYPE: Propylitic Sericitic Silicific'n
MINERALIZATION AGE: Middle Jurassic
ISOTOPIC AGE: 168 +/- 6 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Breccia Stockwork Vein
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 40 x 25 x 3 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A drill program in 1985 has outlined a zone of quartz-amethyst banded and/or brecciated silicification zone. A date on adularia from the Metsantan Lake showing (094E 035) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Unnamed/Unknown Informal

LITHOLOGY: Feldspar Hornblende Crystal Tuff
Crystal Tuff
Crystal Lapilli Tuff
Tuff Breccia
Ash Crystal Tuff
Andesite
Dacite Porphyry Flow
Dacite
Diorite
Diorite Porphyry

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Metsantan and McClair Creek members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion on the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1985

COMMODITY	GRADE	
Silver	2610.0000	Grams per tonne
Gold	1.9500	Grams per tonne
Lead	4.6000	Per cent
Zinc	13.5800	Per cent

COMMENTS: Sample 15059, a 0.31-metre drill core sample, from the interval 21.79 to 22.10 metres in drillhole 85-M-6.

REFERENCE: Assessment Report 13961.

CAPSULE GEOLOGY

The Moose 1 prospect is located approximately 18 kilometres north-northwest of the Lawyers Mine (094E 066), some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Initial property exploration, in the area of the Moose 1 prospect, was focused on lead and zinc sulphides in quartz veins about 675 metres southeast and along strike from the present Moose 1 prospect. Early geochemical surveys outlined an area 1500 metres long with anomalous, silver, lead, zinc and copper in soils. Followup geochemistry, geophysics and geology revealed local mineralization, confirming previous geochemical anomalies.

The Moose 1 prospect is underlain by intermediate porphyritic rocks of the Toodoggone Formation. These include feldspar hornblende crystal and crystal lapilli tuffs and tuff breccias, a thin ash-fall tuff and lesser dacite porphyry flows. Cutting this sequence is a small diorite plug and diorite porphyry along with narrow and scattered basalt and andesite dikes. Dikes are uncommon around the Moose 1 prospect but are widespread to the east. The volcanic sequence appears to dip moderately to the northeast. Observed faults have northwest and east-southeast to southeast strikes. The most important structural feature is a vertical shear and fracture zone that extends northwestward from McClair Creek to Moosehorne Creek.

Hydrothermal alteration zones, including the Moose 1 prospect, are marked by an increase in propylitic alteration consisting of chlorite and epidote, to phyllic consisting of sericite, chlorite, carbonate and pyrite, to complete silicification. Silicified zones are commonly banded and/or brecciated and contain varying amounts of quartz, amethyst, barite, chlorite, sphalerite, pyrite, galena, chalcopyrite and acanthite. Silicified zones display sharp contacts with altered wallrocks. True veins are rare. Breccias are lens-shaped in plan view and display pinch and swell textures in outcrop; the largest breccia lens is 5 metres long by 1 metre wide. Typically, breccia bodies occur in southeast-striking, southwest-dipping fractures. Sulphide content varies from trace up to 30 per cent. There appears to be a close association between anomalous silver and barite. Gold values are generally low.

Adularia-sericite type epithermal mineralization at the Moose 1 prospect consists of a breccia-fault system hosting sphalerite, galena, chalcopyrite and acanthite mineralization over 1.5 to 5 centimetre widths. The zone is partially exposed in outcrop covering a surface area of about 65 metres long by 23 metres wide and trending east-southeast. Mineralization has been intersected in drillholes covering an area about 40 metres long by 25 metres wide. A maximum thickness of 3.44 metres is indicated by drilling.

A drill program, consisting of 16 holes totalling 806.7 metres, was completed in 1985. All holes, except drillholes 85-M-14 and 85-M-15, intersected significant silver mineralization. The best

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 664
REPORT: RGEN0100

CAPSULE GEOLOGY

intercepts were from drillhole 85-M-6 with assay results of 2610.0 grams per tonne silver, 1.95 grams per tonne gold, 13.58 per cent zinc and 4.60 per cent lead over 0.31 metre (Assessment Report 13961).

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EMPR BULL 86
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EMPR MAP 61 (1985); 65 (1989)
GSC BULL 270
GSC OF 306; 342; 483
GSC P 80-1A, pp. 27-32
W MINER June 1981
N MINER October 13, 1986
GCNL #165(Aug.27), 1986
ECON GEOL Vol. 86, pp. 529-554, 1991

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/06

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094E 032**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEW LAW**, NEW LAW 1-3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 21 38 N
LONGITUDE: 127 19 10 W
ELEVATION: 1580 Metres

NORTHING: 6358771
EASTING: 601095

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample NL-87-19, taken from a zone of silicification and quartz veinlets within the Metsantan Member of the Toodoggone Formation (Assessment Report 17288). The showing is 7.8 kilometres southeast of Metsantan Lake and 8.75 kilometres west-northwest of the Lawyers mine (094E 066), on the west side of Lawyers Creek. Smithers is 280 kilometres to the south.

COMMODITIES: Silver Copper

MINERALS

SIGNIFICANT: Unknown
COMMENTS: No significant minerals were reported.
ASSOCIATED: Quartz Pyrite
ALTERATION: Silica Pyrite Epidote Feldspar
ALTERATION TYPE: Silicific'n Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 197 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Trachyandesite
Diorite Dike
Diabase Dike
Granodiorite
Trachyandesite Flow
Lapilli Tuff
Lahar
Volcanic Sandstone
Conglomerate

HOSTROCK COMMENTS: The date is for the Metsantan Member of the Toodoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 28.7000 Grams per tonne
Copper 0.0288 Per cent
COMMENTS: Sample NL-87-19.
REFERENCE: Assessment Report 17288.

CAPSULE GEOLOGY

The New Law showing consists of a mineralized diabase to diorite dike hosted in a granodiorite stock, exposed on a northwest-trending ridge 6.3 kilometres northeast of Kadah Lake and 3.5 kilometres northwest of the confluence of New Law Creek and the Toodoggone River (Assessment Report 9995). The showing is 300 kilometres north of

CAPSULE GEOLOGY

Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The New Law showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The New Law showing is underlain by volcanics of the Metsantan Member of the Toodoggone Formation. The Metsantan Member consists of trachyandesite flows with lesser lapilli tuff and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). Where altered, which includes the New Law showing, these outcrops are characterized by orange and pink feldspar crystals, epidote and pyrite. Quartz veinlets are also found in altered areas. Outcrops of the Attycelley Member of the Toodoggone formation are found nearby and consist of dacitic lithic crystal tuff, lapilli tuff, lahar; volcanic sandstone, local conglomeratic interbeds and minor marine wacke (Bulletin 86).

Numerous fault structures are found around the New Law showing. One set strikes 330 to 010 degrees and appears to be truncated by a major westerly to northwesterly structure.

Twenty rock samples were collected during the course of property exploration in 1987. Overall, the level of gold in the samples is low. However, sample NL-87-19, taken from an area of silicification and quartz veinlets within the Metsantan Member, was anomalous in silver and copper. Assay results were 28.7 grams per tonnes silver and 0.0288 per cent copper (Assessment Report 17288).

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291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

MINFILE NUMBER: **094E 033**

NATIONAL MINERAL INVENTORY: 094E9 Cu1

NAME(S): **RUBY CREEK**, SPINEL CREEK, RUBY

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E09W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 43 05 N
LONGITUDE: 126 23 18 W
ELEVATION: 1667 Metres

NORTHING: 6400319
EASTING: 655562

LOCATION ACCURACY: Within 5 KM

COMMENTS: A quartz vein with pyrite and chalcopyrite, up to 76 centimetres wide, is located on Ruby Creek, which enters the Finlay River 24 kilometres north of the Fishing lakes. It is located a few kilometres east of a large body of granodiorite (Geological Survey of Canada Summary Report 1927 Part A, page 35A).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Epigenetic Hydrothermal

DIMENSION: 1 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: The quartz vein is up to 76 centimetres wide (Geological Survey of Canada Summary Report 1927, Part A, page 36A).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Cambrian-Ordovician
Lower Cambrian

GROUP

Kechika
Atan

FORMATION

Unnamed/Unknown Formation
Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY:

Limestone
Phyllite
Shale
Siltstone
Quartzite
Sandstone
Conglomerate
Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist

CAPSULE GEOLOGY

A quartz vein with pyrite and chalcopyrite, up to 76 centimetres wide, is located on Ruby Creek. The creek enters the Finlay River 24 kilometres north of the Fishing Lakes. The vein is located a few kilometres east of a large body of granodiorite (the Pitman batholith) (Geological Survey of Canada Summary Report 1927 Part A, page 35A).

The Ruby Creek showing occurs within the western part of the Kechika Trough, a southward extension of the Selwyn Basin in the Omineca Belt. Regionally, the area surrounding the Ruby Creek showing is underlain by regionally fault-bound blocks of Upper Proterozoic or Lower Paleozoic strata. Upper Proterozoic strata are assigned regionally to the Ingenika Group and the Lower Paleozoic to the Lower Cambrian Atan Group and the Cambrian to Ordovician Kechika Group. These strata are usually separated by continuous faults and fault zones trending parallel to the Rocky Mountain Trench, and marked by zones of cataclasis and by linear valleys. Lower Tertiary (?) conglomerates of the Sifton Formation are found along the Spinel fault zone. The structural style and degree of metamorphism show significant differences between these fault-bound panels. The age of metamorphic strata (to kyanite grade) in the block between the Pelly and Ridgeway faults on the west and the Kechika fault on the east, including the Sifton Range, is not fully resolved (Geological Survey of Canada Paper 77-1A, pages 243-246).

Lower Cambrian and Ordovician strata of the Atan and Kechika

CAPSULE GEOLOGY

groups are exposed in the Ruby Range, where the Ruby Creek showing is located. The Kechika Group consists of limestone, phyllite, and calcareous shale. The Atan Group is composed of limestone, siltstone, dolomite, quartzite, shale, sandstone and conglomerate (Assessment Report 8984).

The occurrence, although of low grade, is reported to be of considerable size (Geological Survey of Canada Summary Report 1927, Part A, page 38A).

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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/04

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 034**

NATIONAL MINERAL INVENTORY: 094E8 Cu1

NAME(S): **BOWER CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 21 59 N
LONGITUDE: 126 05 12 W
ELEVATION: 1200 Metres

NORTHING: 6361924
EASTING: 675204

LOCATION ACCURACY: Within 5 KM

COMMENTS: Veins with pyrite and chalcopyrite, galena, sphalerite, tetrahedrite and some cobalt nickel arsenides are located on Bower Creek, 13 or 16.25 kilometres above its mouth (Geological Survey of Canada Summary Report 1927 Part A, page 35A).

COMMODITIES: Copper Lead Zinc Cobalt Nickel

MINERALS

SIGNIFICANT: Chalcopyrite Galena Sphalerite Tetrahedrite
COMMENTS: Cobalt and nickel arsenides are also present (Geological Survey of Canada Summary Report 1927, Part A, pages 38-39).

ASSOCIATED: Quartz Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian-Ordovician	Kechika	Unnamed/Unknown Formation	
Lower Cambrian	Atan	Unnamed/Unknown Formation	

LITHOLOGY: Phyllitic Limestone
Limestone
Phyllite
Calcareous Shale
Siltstone
Dolomite
Quartzite
Shale
Sandstone
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

COMMENTS: The degree of metamorphism varies considerably.

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist

CAPSULE GEOLOGY

The Bower Creek showing, composed of veins with pyrite and chalcopyrite, galena, sphalerite, tetrahedrite and some cobalt nickel arsenides, are located on Bower Creek 13 or 16.25 kilometres above its mouth (Geological Survey of Canada Summary Report 1927 Part A, page 35A).

Regionally, the Bower Creek showing is hosted within a regional, northwest striking fault-bound sequence of Cambrian to Ordovician rocks. These rocks have been divided into a lower sequence, the Lower Cambrian Atan Group, and an upper sequence, the Cambrian to Ordovician Kechika Group. The Atan Group, in the Toodoggone map area, is composed of three units. From oldest to youngest these are: quartzite with minor pebble conglomerate; impure quartzite, shale, local sandstone, conglomerate; and limestone, siltstone and dolomite. The Kechika Group, of which rocks of the Bower Creek showing belong, is composed of phyllitic limestone, calcareous shale, limestone and phyllite.

The discovery of the veins was made by Emil Brunlund while prospecting for the Consolidated Mining and Smelting Company in 1927. The property and surrounding area was prospected from 1927 to 1930. The work done on the veins comprising the Bower Creek showing were much narrower than initially indicated on surface. Mineralization of sufficient grade and magnitude to suggest a commercial operation was not discovered (Energy, Mines and Resources Canada Mineral Policy

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PAGE: 670
REPORT: RGEN0100

CAPSULE GEOLOGY

Corporation Files - Cominco Limited Annual Report 1929).

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EMR MP CORPFILE (Cominco Ltd. Annual Report 1929)
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GSC OF 306; *483
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pp. 13-16; 76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246;
80-1A, p. 348; 83-1A, pp. 221-227; 84-1A, pp. 105-108
GSC MAP 207A; 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/04

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 035**

NATIONAL MINERAL INVENTORY: 094E6 Fe1

NAME(S): **METSANTAN LAKE**, PUT, HUMP

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W 094E11W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 29 53 N
LONGITUDE: 127 24 36 W
ELEVATION: 1500 Metres

NORTHING: 6373945
EASTING: 595290

LOCATION ACCURACY: Within 500M

COMMENTS: Location of a large deposit of specular hematite (Energy, Mines and Resources Canada: Metals File MR-FE-301.00.02).

COMMODITIES: Iron

MINERALS

SIGNIFICANT: Specularite Magnetite

COMMENTS: Specular hematite.

ALTERATION: Hematite

ALTERATION TYPE: Hematite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Lower Jurassic

Hazelton

Toodoggone

ISOTOPIC AGE: 204, 200 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

LITHOLOGY: Massive Crystal Ash Tuff
Trachydacite Ash Flow Tuff
Lapilli Tuff
Trachydacite
Lahar
Trachyandesite Flow
Trachyandesite
Volcanic Sandstone
Conglomerate

HOSTROCK COMMENTS: The dates given are the oldest ages of the Adoogacho and Metsantan members of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1940

SAMPLE TYPE: Rock

COMMODITY

GRADE

Iron

60.0000

Per cent

REFERENCE: Energy, Mines and Resources Canada; National Mineral Inventory.

CAPSULE GEOLOGY

The Metsantan Lake showing consists of a large deposit of specular hematite which is located 1 kilometre north of the confluence of the Abesti Creek with Moyez Creek, along Moyez Creek. It is located in the west-central part of the Toodoggone gold camp, approximately 300 kilometres north of Smithers.

In 1940, prospector T.S. Thompson reportedly discovered an iron occurrence some distance north of Metsantan Lake, while prospecting for Walter Wilson of Burns Lake. Mr. Thompson is reported to have done further prospecting on the occurrence in 1942.

The large occurrence of specular hematite was reported to have yielded up to 60 per cent iron, based on assay samples taken from the

CAPSULE GEOLOGY

occurrence. Doug Lay, in his earlier 1934 report on the placer occurrences in the vicinity of McClair Creek and the Toodoggone River, noted the presence of a large quantity of magnetite and lesser specular hematite in the glacial drift of that area. The ice flow direction was southeasterly in that area.

The area is underlain by volcanics of the Adoogacho and Metsantan members of the Lower Jurassic Toodoggone Formation (Hazelton Group). Property exploration work described these rocks as massive, purple crystal ash tuffs with pervasive weak hematization (Assessment Report 13037). Regional the Adoogacho Member is describes as being composed of trachydacite ash-flow tuff, lapilli and finer tuff, volcanic sandstone and conglomerate (Bulletin 86). The overlying Metsantan Member consists of trachyandesite flows with lesser lapilli tuff and lahar; minor volcanic sandstone and conglomerate (Bulletin 86).

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GSC BULL 270
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GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/07/24
DATE REVISED: 1992/11/10

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 036**

NATIONAL MINERAL INVENTORY: 094E6 Cu5

NAME(S): **EHL, JOANNA, JOANNA 1,
JOANNA 2, ED 1-14, EHL 1-12,
BELLE 1-24**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 28 20 N
LONGITUDE: 127 04 03 W
ELEVATION: 1950 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6371602
EASTING: 615895

COMMENTS: Location of rock samples ATR-04 and 05 taken from a zone of silicification and quartz veinlets 250 metres due north of Mount Gordonia. The prospect is located in the north-central portion of the Toodoggone gold camp, approximately 290 kilometres north of Smithers.

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
COMMENTS: Bornite stringers are found separately from pyrite and chalcopyrite stringers in quartz veinlets.
ASSOCIATED: Quartz Pyrite Specularite
ALTERATION: Silica Specularite Hematite
COMMENTS: Copper staining was also reported.
ALTERATION TYPE: Silicific'n Hematite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Stockwork
CLASSIFICATION: Volcanogenic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Porphyritic Biotite Feldspar Andesite
Lapilli Tuff
Pyroclastic Breccia
Accretionary Lapilli Tuff
Andesite Flow
Basalt Flow
Basalt
Andesite Breccia
Basalt Breccia
Siliceous Andesite

HOSTROCK COMMENTS: The Toodoggone volcanics are undivided.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 13.0000 Grams per tonne
Gold 1.7000 Grams per tonne
Copper 0.4915 Per cent

COMMENTS: Sample AT-86-R-04, one of two anomalous grab samples taken in 1986. Sampling in 1989 yielded higher copper values.
REFERENCE: Assessment Report 15818.

CAPSULE GEOLOGY

The EHL prospect is located approximately 250 metres north of

CAPSULE GEOLOGY

Mount Gordonina, some 290 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp. The EHL prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The EHL prospect lies within undivided volcanics of the Toodoggone Formation. These are described as well-bedded lapilli tuff and pyroclastic breccia, rare accretionary lapilli tuff and porphyritic andesite (Bulletin 86). At the EHL prospect they have been described as green porphyritic biotite, feldspar andesite and light green tuff (Assessment Report 18763). Immediately to the north the Takla Group volcanics consist of basalt and andesite flows, breccias with limestone and minor argillite (Bulletin 86) and Assessment Report 18763).

Alteration and mineralization at the EHL prospect consists of quartz stringers hosting disseminated, and locally massive, pyrite and chalcopyrite in silicified andesites with associated specular hematite and copper staining. In 1970, exploration in the area uncovered bornite stringers up to 16 millimetres wide in an outcrop exposure near the EHL prospect.

In 1986, two grab rock samples were taken from the EHL prospect. Sample AT-86-R-04 analysed 1.7 grams per tonne gold, 13.0 grams per tonne silver and 0.4915 per cent copper (Assessment Report 15818). Similarly, sample AT-86-R-05 analysed 0.64 gram per tonne gold, 25.2 grams per tonne silver and 1.017 per cent copper (Assessment Report 15818). In 1989, further sampling of this zone yielded assay values of 1.057 to 4.134 per cent copper (Assessment Report 18763).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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pp. 409-415; 1991, pp. 207-216
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GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
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N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
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Mineralization, Toodoggone River Area, North-Central British
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Jurassic Toodoggone Formation, Toodoggone Mining District, British

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DATE CODED: 1985/07/24
DATE REVISED: 1992/09/18

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 037**

NATIONAL MINERAL INVENTORY: 094E6 Cu3

NAME(S): **GOLDEN NEIGHBOR 1**, GOLDEN NEIGHBOR, GOLDEN NEIGHBOR 1-4,
SAUNDERS 162, SAUNDERS, SAUNDERS NO. 2 GRP.,
SAUNDERS 58-61, SAUNDERS 82-83, SAUNDERS 160-162,
CHAPPELLE, CHAPPELLE 134, CHAPPELLE 136-137,
CHAPPELLE 195, CHAPPELLE 197

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 19 09 N
LONGITUDE: 127 02 05 W
ELEVATION: 1720 Metres

NORTHING: 6354624
EASTING: 618353

LOCATION ACCURACY: Within 500M

COMMENTS: A total of 5 holes were drilled to test mineralization in a series of quartz veins and silicified volcanics occurring within an argillic-altered fault zone, approximately 6 kilometres northeast of the Baker mine (094E 026), about 280 kilometres north of Smithers (Assessment Report 15512).

COMMODITIES: Silver Molybdenum Gold Tungsten Zinc Copper Lead

MINERALS

SIGNIFICANT: Sphalerite Chalcopyrite Galena Molybdenite Scheelite
COMMENTS: Scheelite is minor (Forster, 1984).
ASSOCIATED: Quartz Pyrite
ALTERATION: Epidote Chlorite Limonite Silica
ALTERATION TYPE: Propylitic Argillic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 6000 x 1000 Metres STRIKE/DIP: 322/55S TREND/PLUNGE: /
COMMENTS: An argillic-altered fault zone has been mapped as being 6 kilometres long by 0.2 to 1.0 kilometres wide (Map 61).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 194.2 +/- 3.6 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Hornblende			

LITHOLOGY: Pyroxene Biotite Hornblende Flow
Andesite Flow
Andesitic Volcanic Breccia
Andesitic Lapilli Tuff
Crystal Tuff
Lapilli Ash Tuff
Andesite
Ash Tuff
Ash Flow
Lava Flow

HOSTROCK COMMENTS: Hornblende of the Attycelley Member has been dated at 192.9 +/- 2.7 Ma and the Saunders Member at 194.2 +/- 3.6 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1986

COMMODITY	GRADE	
Silver	11.7000	Grams per tonne
Gold	0.2500	Grams per tonne
Copper	0.0869	Per cent
Molybdenum	0.0033	Per cent
Lead	0.0039	Per cent
Zinc	0.1282	Per cent

COMMENTS: Grade is from the 1.82-metre interval, from 33.15 to 34.96 metres in drillhole LK-86-01.

REFERENCE: Assessment Report 15512.

CAPSULE GEOLOGY

The Golden Neighbor 1 occurrence is located approximately 6 kilometres northeast of the former Baker mine (094E 026), some 280 kilometres north of Smithers. The Golden Neighbor 1 prospect lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The developed prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Golden Neighbor 1 occurrence is underlain by a succession of lower to middle subaerial volcanics and associated volcanoclastic sediments of the upper volcanic cycle of the Toodoggone Formation. The dominant lithologies underlying the prospect and east of a limonitic gossan fault zone are delineated into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. Units west of the limonitic gossan fault zone consist of a heterogeneous mixture of green, grey and mauve lapilli ash and lesser block tuff, with lesser interspersed ash flows and lava flows and interbedded epiclastics of the Attycelley Member and partly welded, crystal-rich dacitic ash flows of the conformably overlying Saunders Member. The area is also disrupted by a conjugate set of northwest and northeast-striking faults that appear to have substantial displacement.

Weak to intense propylitic alteration consists of fracture infilling with epidote and chlorite adjacent to epithermal vein systems. Intense argillic alteration consisting of limonite forms a gossan zone 6 kilometres long by 0.2 to 1.0 kilometres wide along a major northwest-striking fault.

Mineralization at the Golden Neighbor 1 prospect consists of quartz veins and stringers and silicified volcanics occurring within the argillic-altered fault zone and frequently containing chalcopyrite, sphalerite, galena, molybdenite, pyrite and scheelite.

A drill program consisting of NQ holes, totalling 605.02 metres, was conducted on this zone in 1986, as followup to a weak VLF electromagnetic conductor and gold and silver in soils. Drillholes LS-86-1 and 2 were drilled on a 1-metre wide quartz vein exposed in trenching. Assay results from drill core were overall only weakly anomalous. Several zones of gold and silver mineralization were intersected in drillholes LK-86-1, 4 and 5. The best intersection from drillhole LK-86-1 analysed 11.7 grams per tonne silver, 0.25 gram per tonne gold, 0.08 per cent copper, 0.003 per cent lead and 0.003 per cent molybdenum over 1.81 metres (Assessment Report 15512).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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GCNL #23(Feb.1), #66 (Apr.3) 1985; #165 (Aug.27), 1986
IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
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DATE CODED: 1985/07/24
DATE REVISED: 1992/03/12

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 038**

NATIONAL MINERAL INVENTORY:

NAME(S): **TOR**, TOR 1-9

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E08E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 17 59 N
LONGITUDE: 126 01 36 W
ELEVATION: 1225 Metres

NORTHING: 6354663
EASTING: 679136

LOCATION ACCURACY: Within 1 KM

COMMENTS: The location of a silicified limestone unit with radiation readings 8 to 10 times background, within the Cambrian to Ordovician Kechika Group. The showing is located on the east slope of the Pelly Creek valley, just north of the divide between Pelly and Bower creeks (Assessment Report 218). Ware is 25 kilometres to the east.

COMMODITIES: Hafnium

MINERALS

SIGNIFICANT: Zircon Pyrite
COMMENTS: Radioactivity is likely due to hafnium.

ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Sedimentary

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Cambrian-Ordovician
Eocene

GROUP

Kechika

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Siliceous Limestone
Phyllite
Limestone
Shale
Quartzite
Dacite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist

CAPSULE GEOLOGY

The TOR showing, consisting of a silicified limestone unit with radiation readings 8 to 10 times background within the Cambrian to Ordovician Kechika Group, is located on the east slope of the Pelly Creek valley just north of the divide between Pelly and Bower creeks (Assessment Report 218). Ware is 25 kilometres to the east.

Regionally, the TOR showing is hosted within a regional, northwest striking fault-bound sequence of Cambrian to Ordovician rocks. These rocks have been divided into a lower sequence, the Lower Cambrian Atan Group, and an upper sequence, the Cambrian to Ordovician Kechika Group. The Atan Group, in the Toodoggone map area, is composed of three units. From oldest to youngest these are: quartzite with minor pebble conglomerate; impure quartzite, shale, local sandstone, conglomerate; and limestone, siltstone and dolomite. The Kechika Group is composed of phyllitic limestone, calcareous shale, limestone and phyllite. Immediately east of the TOR showing is a tabular, northwest striking Eocene dacite dike.

The TOR showing area is underlain by phyllite, limestone, shale, quartzite and silicified limestone of the Cambrian to Ordovician Kechika Group.

The silicified limestone unit exhibits 8 to 10 times background radioactivity. The unit contains zircon and pyrite and the radioactivity is likely due to hafnium. A spectrographic analysis of rock from this unit showed no radium, uranium or thorium. However, the spectrographic analysis does indicate zircon (Assessment Report 218).

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 680
REPORT: RGEN0100

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GSC OF 306; *483; 551
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pp. 13-16; 76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246;
80-1A, p. 348; 83-1A, pp. 221-227; 84-1A, pp. 105-108
GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/19

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 039**

NATIONAL MINERAL INVENTORY: 094E2 Cu6

NAME(S): **XMAS, PILL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 14 48 N
LONGITUDE: 126 57 36 W
ELEVATION: 1640 Metres

NORTHING: 6346688
EASTING: 623094

LOCATION ACCURACY: Within 1 KM

COMMENTS: Centre of the Xmas claim group, 5.5 kilometres north-northwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 1940, Geology map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Toodoggone	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Rhyolite Flow
Rhyolite Tuff
Rhyolite
Feldspar Porphyry
Monzonite Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

CAPSULE GEOLOGY

The Xmas showing is located approximately 5.5 kilometres north-northwest of Drybrough Peak, some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The occurrence is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Xmas showing is underlain by pyritic and intensely shattered and altered Takla Group volcanic rocks consisting mainly of andesite, and Toodoggone Formation rhyolite flows and tuffs. Small intrusions,

CAPSULE GEOLOGY

low in pyrite, consisting of feldspar and monzonite porphyry, intrudes the volcanics.

Minor amounts of chalcopyrite and secondary malachite was found in a single 15-centimetre wide quartz vein in altered volcanic rocks.

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291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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DATE CODED: 1985/07/24
DATE REVISED: 1993/02/09

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 040**

NATIONAL MINERAL INVENTORY: 094E6 Cu7

NAME(S): **SOM**, SOM 1-40, SAUNDERS,
SAUNDERS 1-4, SAUNDERS NO. 2 GRP., SAUNDERS 58-61,
SAUNDERS 82-83, SAUNDERS 160-162, CHAPPELLE,
CHAPPELLE 134, CHAPPELLE 136-137, CHAPPELLE 195,
CHAPPELLE 197, NE, GO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 20 30 N
LONGITUDE: 127 03 14 W
ELEVATION: 1640 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of outcrop from which two samples were taken of chalcopyrite along fractures, located approximately 7.6 kilometres east-northeast of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 2083).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6357095
EASTING: 617127

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Epidote Sericite Pyrite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 120 x 60 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Disseminated chalcopyrite is fracture-controlled in a zone of moderate fracture intensity, measuring 120 by 60 metres and roughly elliptical in shape (Assessment Report 2083).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Andesitic Tuff
Andesite
Latite Lava Flow
Latite
Lahar
Epiclastic
Pyroclastic
Welded Dacitic Ash Flow
Pyroxene Biotite Hornblende Flow
Volcanic Breccia

HOSTROCK COMMENTS: Volcanics are assigned to the Metsantan Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1969
SAMPLE TYPE: Chip
COMMODITY: Copper GRADE: 0.2800 Per cent

COMMENTS: One of two 9.144-metre chip samples.
REFERENCE: Assessment Report 2083.

CAPSULE GEOLOGY

The Som showing is located approximately 7.6 kilometres

CAPSULE GEOLOGY

east-northeast of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. The Som showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. It is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Som showing is underlain by a succession of lower to middle subaerial volcanics and associated volcanoclastic sediments of the upper volcanic cycle of the Toodoggone Formation. Lithologies underlying the Som showing consist predominantly of latite lava flows with interflow lahar and mixed epiclastic and pyroclastic rocks of the Metsantan Member. To the south and west, Toodoggone Formation volcanics are composed of partly welded, crystal-rich dacitic ash flows of the Saunders Member. The dominant lithologies southeast of the showing are delineated into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. The area south is disrupted by a conjugate set of northwest and northeast-striking faults that appear to have substantial displacement.

Alteration consists of epidote, sericite and pyrite locally developed in association with moderate fracturing.

Mineralization at the Som showing consists of chalcopyrite and associated malachite along fractures in an outcrop of andesitic tuff and near the contact between two andesitic tuff units. The outcrop is elliptical in shape and 60 to 120 metres diameter.

Two chip samples taken across this zone 30 metres apart, assayed 0.21 per cent copper over 9.14 metres and 0.28 per cent copper over 9.14 metres (Assessment Report 2083).

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ECON GEOL Vol. 86, pp. 529-554, 1991
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 685
REPORT: RGEN0100

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DATE CODED: 1985/07/24
DATE REVISED: 1992/03/18

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 041**

NATIONAL MINERAL INVENTORY:

NAME(S): **YELLOW DOG**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 35 27 N
LONGITUDE: 127 18 36 W
ELEVATION: 1960 Metres

NORTHING: 6384416
EASTING: 601025

LOCATION ACCURACY: Within 500M

COMMENTS: The location is centred on the Yellow Dog showing, located 2.1 kilometres northwest of Claw Mountain (Assessment Report 17218, Figure 4).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite Malachite
ASSOCIATED: Quartz
ALTERATION: Epidote Chlorite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Porphyritic Andesite
Tuff
Agglomerate
Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Zeolite
Greenschist

COMMENTS: Metamorphism may be responsible for widespread propylitization.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab
COMMODITY
Silver 39.4000 Grams per tonne
Gold 6.0700 Grams per tonne
REFERENCE: Assessment Report 17218.

CAPSULE GEOLOGY

The Yellow Dog showing, discovered in 1985, is located 2.15 kilometres northwest of Claw Mountain.
The Yellow Dog showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.
Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.
The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary

CAPSULE GEOLOGY

for variably rotated and tilted blocks underlain by monoclinical strata.

The Yellow Dog area is underlain by Takla Group porphyritic andesites, tuffs, agglomerates and minor siltstone. Most of the rocks exhibit weak to moderate propylitic (epidote-chlorite) alteration. The units are offset by a fault striking 110 degrees of uncertain amplitude.

The showing consists of a narrow (15 centimetre) malachite-stained quartz vein hosted within pyritic porphyritic andesite. Original sampling of the vein in 1985 yielded 50.0 grams per tonne gold and 84.7 grams per tonne silver (Sample 001, Assessment Report 15069). In followup sampling in 1987, a grab sample from the vein assayed 6.07 grams per tonne gold and 39.40 grams per tonne silver (Assessment Report 17218).

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1987-C328-C346; 1988-C185-C194
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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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DATE CODED: 1992/12/14
DATE REVISED: 1993/04/13

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 042**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLACK**, LAR, PL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 17 45 N
LONGITUDE: 126 51 48 W
ELEVATION: 1880 Metres

NORTHING: 6352338
EASTING: 628754

LOCATION ACCURACY: Within 500M

COMMENTS: The location of previously documented chalcopyrite and sphalerite mineralization known as the Black showing (Assessment Report 17451). The showing is located 600 metres east of The Pillar and 8.75 kilometres northeast of the Shasta occurrence (094E 050). Smithers is 280 kilometres to the south.

COMMODITIES: Copper Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite
COMMENTS: Three to 5 per cent disseminated pyrite.
ASSOCIATED: Quartz Pyrite Limonite Epidote K-Feldspar
ALTERATION: Limonite Epidote Specularite K-Feldspar
ALTERATION TYPE: Argillic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Porphyritic Andesite
Feldspar Porphyry Andesite Tuff
Feldspar Porphyry Dacite Tuff
Feldspar Porphyry Andesite Flow
Andesite
Dacite
Porphyry Dike
Feldspar Porphyry Dacite Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP: Regional
GRADE: Greenschist Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

CAPSULE GEOLOGY

The Black showing, chalcopyrite and sphalerite hosted in an argillic alteration zone, is located 600 metres east of The Pillar and 8.75 kilometres northeast of the Shasta occurrence (094E 050). The showing is located in the central part of the Toodoggone gold camp, 280 kilometres north of Smithers.

The Black showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial

CAPSULE GEOLOGY

strata.

The Black showing is underlain by andesitic flows and tuffs of the Toodoggone Formation. Generally these volcanics are characterized by grey to grey-maroon feldspar porphyry andesitic to dacitic tuffs and flows, locally exhibiting bedding and flow banding. Finely disseminated specularite within the volcanics is common. These are intruded by porphyry dikes. Fracture controlled propylitic and argillic alteration are common. These are surrounded by Toodoggone volcanics of the Metsantan Member.

The Black showing consists of chalcopyrite and sphalerite mineralization, hosted in an argillic alteration zone on an east-trending ridge. An argillic altered potassium feldspar-quartz-pyrite +/- epidote mineral assemblage was noted. Pyrite, as disseminations, ranges from 3 to 5 per cent. The hostrock of this alteration zone is maroon porphyritic andesite, containing local pink feldspar phenocrysts, epidote and quartz. Numerous quartz veins with limonite were sampled. These veins are randomly oriented and 2 to 4 centimetres wide.

In 1988, the previously documented Black showing was examined. Several samples were taken from along an east-trending ridge, roughly 600 to 750 metres to the east of the Black showing. The best results were from sample 6741 which assayed 3.3 grams per tonne silver and 0.022 gram per tonne gold. Several other samples analysed 1.8 and 1.9 grams per tonne silver (Assessment Report 17451).

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GSC OF 306; 483
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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
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MIN REV September/October, 1982; July/August, 1986
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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DATE CODED: 1985/07/24
DATE REVISED: 1992/11/30

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 043**

NATIONAL MINERAL INVENTORY: 094E11 Cu3

NAME(S): **FRED**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 37 54 N
LONGITUDE: 127 28 15 W
ELEVATION: 1680 Metres

NORTHING: 6388733
EASTING: 591309

LOCATION ACCURACY: Within 500M

COMMENTS: The location given is centred on the original Fred showing situated approximately 10 kilometres southeast of the confluence of Chukachida and Stikine rivers (Assessment Report 18465, Map #3).

COMMODITIES: Copper Lead Zinc Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Galena
ASSOCIATED: Quartz Carbonate Barite Pyrite
ALTERATION: Silica Clay
ALTERATION TYPE: Silicific'n Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 10 x 1 Metres STRIKE/DIP: 120/60S TREND/PLUNGE:
COMMENTS: Dimensions are for the mineralized area. Strike and dip is for quartz-carbonate veins.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 200 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Augite Porphyry Andesite
Basalt
Quartz Dacite Sub Volcanic
Quartz Phyrlic Dacite

HOSTROCK COMMENTS: The date given is the oldest determined for the Adoogacho Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Zeolite
Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1973
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Gold	10.2600 Grams per tonne
Copper	0.2400 Per cent
Lead	2.4200 Per cent
Zinc	0.4900 Per cent

COMMENTS: Resampling of the zone in 1989 yielded negligible gold values (71503).
REFERENCE: Assessment Report 4643.

CAPSULE GEOLOGY

The Fred showing, discovered in 1973, is situated approximately 10 kilometres southeast of the confluence of Chukachida and Stikine rivers.

The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments,

CAPSULE GEOLOGY

volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Fred showing is exposed on a north-trending ridge underlain by Takla Group andesites and basalts. To the south these volcanics are in fault contact with and intruded by quartz phyric dacite volcanics and subvolcanics of the Adogacho Member of the Lower Jurassic Toodoggone Formation (Hazelton Group).

The Fred showing consists of a series of southerly dipping quartz-carbonate-(barite) veins (up to 30 centimetres wide) striking 120 degrees and mineralized with varying amounts of chalcopyrite, bornite, chalcocite, pyrite and galena. The veins are hosted within a 10 by 1.5 metre zone of argillic and siliceous altered brecciated augite porphyry andesites. A grab sample of the mineralization assayed 10.26 grams per tonne gold, 2.42 per cent lead, 0.49 per cent zinc and 0.24 per cent copper (Sample 71503, Assessment Report 4643). A chip sample of this material assayed 28 grams per tonne silver and contained 1 per cent chalcopyrite (Sample DM-83, Assessment Report 18465).

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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
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DATE CODED: 1985/07/24
DATE REVISED: 1992/12/07

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 044**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E13W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 49 17 N
LONGITUDE: 127 48 19 W
ELEVATION: 1520 Metres

NORTHING: 6409451
EASTING: 570968

LOCATION ACCURACY: Within 1 KM

COMMENTS: The showing is located 7 kilometres due west of where Park Creek turns from a southwesterly flow to a due south flow towards the Stikine River. The location is assumed to be correct from the initial MINFILE records of this occurrence which are no longer available.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica Pyrite
ALTERATION TYPE: Silicific'n Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Granodiorite
Quartz Monzonite
Andesitic Tuff
Andesitic Breccia
Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
COMMENTS: Located west of the southern extension of the Kutcho fault.

PHYSIOGRAPHIC AREA: Cassiar Mountains
GRADE: Greenschist

CAPSULE GEOLOGY

The Al showing is located 7.0 kilometres due west of where Park Creek turns from a southwesterly flow to a due south flow towards the Stikine River. The location given is assumed to be correct from the initial records of this occurrence which are no longer available.

Regionally, the location of the Al showing is within and near the margin of a major quartz monzonite stock of the Early Jurassic Black Lake Suite. A large fault-bound block of Upper Triassic Takla Group rocks lies immediately to the west and several roof pendants occur to the north of the Al showing in the quartz monzonite stock. To the south lies a package of Upper Paleozoic rocks that have tentatively been assigned to the Permian Asitka Group (Geological Survey of Canada Open File 483). More recent studies of these rocks suggests that they may be correlative with rocks of the Kutcho Formation in the Cry Lake map area. Fossil evidence gives a Mississippian age for at least part of the sequence. A tentative age of Devonian to Permian is given to these rocks. The Takla Group in the Toodoggone map area is described as consisting of coarse grained augite phyrlic basalt and andesite lava flows; lesser amygdaloidal and coarse plagioclase phyrlic flows; local pillow lava and hyaloclastite; interflow tuffaceous siltstone; mudstone and limestone (Bulletin 86).

The Al showing is locally underlain by Takla Group (?) andesitic tuffs and breccias. These have been intruded by a small granodiorite plug which has caused extensive silicification and pyritization of the volcanics along the contact. Pyrite and chalcopyrite are associated with quartz-carbonate veinlets.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 693
REPORT: RGEN0100

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p. 348; *80-1B, pp. 207-211; 83-1A, pp. 221-227; 84-1A, pp.
105-108
GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/12

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 045**

NATIONAL MINERAL INVENTORY:

NAME(S): **PINETREE (F2)**, FIN, FIN 1-19,
PINE, PINE 1-144, ZIP,
GEM, KID

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02E

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 57 13 24 N
LONGITUDE: 126 41 09 W

NORTHING: 6344620
EASTING: 639722

ELEVATION: 1120 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: Location of Trench 2, approximately 20 kilometres northeast of the northern end of Thutade Lake and 1 kilometre south of the Finlay River, about 280 kilometres north of Smithers (Assessment Report 11032).

COMMODITIES: Copper Zinc Molybdenum Gold

MINERALS

SIGNIFICANT: Unknown
ALTERATION: Chlorite Quartz
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	Unnamed/Unknown Informal
Lower Jurassic			

LITHOLOGY: Hornblende Diorite
Hornblende Granodiorite
Biotite Granodiorite
Dacite
Rhyodacite
Porphyritic Dacite Rhyodacite
Quartz Latite
Latite
Andesite Trachyandesite Pyroclastic
Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located on the southeastern margin of the Toodoggone gold camp.

INVENTORY

ORE ZONE: ROCK REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1990
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Gold	0.0620 Grams per tonne
Copper	0.9520 Per cent
Molybdenum	0.0020 Per cent
Zinc	0.7990 Per cent

COMMENTS: Grab sample of chlorite-quartz altered diorite from the Fin 2 claim.
REFERENCE: Assessment Report 20300.

CAPSULE GEOLOGY

The Pinetree (F2) porphyry copper showing is located approximately 20 kilometres northeast of the northern end of Thutade Lake and 1 kilometre south of the Finlay River, some 280 kilometres north of Smithers. The Sturdee River airstrip is approximately 27 kilometres west of the property. The showing lies within the Omineca-Cassiar mountains along the southeastern margin of the

CAPSULE GEOLOGY

Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Pinetree (F2) showing is underlain by Toodoggone Formation volcanics that have been intruded by Lower to Middle Jurassic granodiorites. The Toodoggone volcanics consist mainly of pink dacite flows and fine-grained porphyritic rocks of dacite-rhyodacite composition of the Saunders Member, with minor andesite to trachyandesite pyroclastics and strongly potassic latite to quartz latite of the Metsantan Member. Plutonic rocks consist mainly of hornblende and biotite granodiorite with lesser hornblende diorite. The granodiorite phases range in texture from inequigranular to porphyritic. Swarms of red dikes of a variety of compositions cut these rock types. Dike swarms in the plutonic region strike northerly and some indication that they radiate outward from a point to the south part of the Fin (Area A) prospect (094E 016).

In 1990, 126 rock samples were collected in and surrounding the Pinetree (F2) showing. Geochemistry results indicate there are two types of mineralization: 1) copper-gold within the volcanic rocks and 2) copper-molybdenum within the intrusive rocks.

The best copper value from assays was from sample PT-113 of quartz-chlorite altered diorite. This sample assayed 0.952 per cent copper, 0.79 per cent zinc, 0.002 per cent molybdenum, 0.5 gram per tonne silver and 0.06 gram per tonne gold (Assessment Report 20300). Other samples in the immediate area yielded anomalous copper and molybdenum values including the highest molybdenum assay value of 0.18 per cent molybdenum from sample PT-116 of chlorite-altered granodiorite (Assessment Report 20300). A hornblende granodiorite sample 200 metres to the northwest of sample PT-116 assayed the highest copper value of 56 rock samples collected during 1987. Assay values are 0.47 per cent copper, 0.30 per cent zinc, 0.49 gram per tonne gold and 0.2 gram per tonne silver (Assessment Report 16502).

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- EMPR BULL 86
- EMPR EXPL 1975-E163-E167; 1976-E175-E177; 1977-E216-E217; 1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345; 1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414; 1987-C328-C346; 1988-C185-C194
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- EMPR GEM 1969-103; 1971-63-71; 1973-456-463
- EMPR GEOLOGY 1977-1981, pp. 156-161
- EMPR MAP 61 (1985); 65 (1989)
- EMPR PF (Photogeologic Interpretation Map of the Northern Omineca area, (Oct. 1964), Canadian Superior Exploration Limited-in 94E General File)
- GSC BULL 270
- GSC OF 306; 483
- GSC P 80-1A, pp. 27-32
- ECON GEOL Vol. 86, pp. 529-554, 1991
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- W MINER April, 1982

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 696
REPORT: RGEN0100

BIBLIOGRAPHY

WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/01
DATE REVISED: 1992/03/01

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 046**

NATIONAL MINERAL INVENTORY: 094E11 Cu1

NAME(S): **CLAW**, SILVER BLUFF, NAMERA

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 36 38 N
LONGITUDE: 127 18 27 W
ELEVATION: 1830 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6386615
EASTING: 601120

LOCATION ACCURACY: Within 500M

COMMENTS: Location of diamond-drill hole 75-1 (Assessment Report 5635, Map 2).
The Claw prospect is situated on a north-trending ridge approximately
3.5 kilometres northwest of Claw Mountain.

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Copper Chrysocolla
ASSOCIATED: Quartz Carbonate Hematite Magnetite Pyrite
Calcite Chlorite Zeolite

COMMENTS: Magnetite and hematite are disseminated throughout the volcanics.
ALTERATION: Epidote Chlorite Malachite Limonite Chrysocolla
Albite Zeolite

ALTERATION TYPE: Propylitic Oxidation Argillic Albitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear Disseminated
CLASSIFICATION: Epigenetic Hydrothermal Volcanogenic
SHAPE: Irregular
MODIFIER: Fractured Sheared
DIMENSION: 100 x 80 Metres STRIKE/DIP: 125/80E TREND/PLUNGE:
COMMENTS: The strike and dip are for the main vein structures (Assessment
Report 12871). The dimensions given are for the surface exposure
of the main vein system (Assessment Report 20729).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE: Upper Triassic GROUP: Takla FORMATION: Unnamed/Unknown Formation IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Augite Porphyry Andesite
Amygdaloidal Andesite Flow
Amygdaloidal Basalt Flow
Agglomerate
Tuff
Andesite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE: Zeolite

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Chip
COMMODITY: Silver 214.8800 Grams per tonne
Copper 8.2000 Per cent
COMMENTS: Sample 84-CK-35 is a chip sample from a number of trenches placed on
disseminated mineralization.
REFERENCE: Assessment Report 12871.

CAPSULE GEOLOGY

The Claw prospect is situated on a north-trending ridge approximately 3.5 kilometres northwest of Claw Mountain. Between 1974 and 1975 Union Miniere Explorations and Mining Corporation Limited drilled 7 diamond-drill holes for a total of 1130 metres. The Claw prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and

CAPSULE GEOLOGY

to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Claw prospect is underlain by Takla Group augite porphyry andesites, amygdaloidal andesite and basalt flows, minor agglomerates and tuffs. This sequence is locally intruded by andesite dikes. All of the units have undergone weak propylitic alteration; epidote and chlorite are ubiquitous. Calcite, chlorite, zeolites and native copper often fill the amygdules. Hematite and magnetite are found disseminated throughout the volcanic units. Sheared and fractured zones are abundant and are associated with limonite and minor albite alteration of the wallrock.

Two modes of mineralization occur, both are widespread. Chalcopyrite, bornite, chalcocite, malachite and minor chrysocolla are hosted within quartz-carbonate veins and along fracture surfaces associated with the shear zones. A chip sample of the 100 by 80 metre main zone, with a vein system striking 125 degrees and dipping 80 degrees east, assayed 2.3 per cent copper and 28 grams per tonne silver (Sample 84-CK-49, Assessment Report 12871). The second type of mineralization occurs as disseminations and amygdule fillings of native copper, chrysocolla and malachite with minor chalcopyrite and bornite. This type of mineralization is locally abundant but sporadically distributed. Chip samples of a high-grade zone of this material assayed 8.2 per cent copper and 214.89 grams per tonne silver (Sample 84-CK-35, Assessment Report 12871).

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MINFILE NUMBER: **094E 047**

NATIONAL MINERAL INVENTORY: 094E2 Cu7

NAME(S): **VIP 7, VIP, VIP 1-40, GRACE, GRACE 1-14, GRACE 1-5, ERROR, ERROR 1-8, FINLAY RIVER, SKARN, SKARN 1-4, CONCHA, CONCHA 1-7, JOK, JOK 1-6**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

LATITUDE: 57 10 03 N
LONGITUDE: 126 52 54 W
ELEVATION: 1280 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of silver, copper and zinc mineralization from skarn samples MT 22 and 23, located approximately 12.8 kilometres north of Thutade Lake between Finlay River and Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 13057).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6338022
EASTING: 628094

COMMODITIES: Copper Zinc Silver Gold

MINERALS

SIGNIFICANT:	Chalcopyrite	Sphalerite	Pyrite	Specularite	
ASSOCIATED:	Garnet	Magnetite	Specularite	Hematite	Diopside
	Wollastonite	Epidote	Chlorite		
ALTERATION:	Garnet	Diopside	Wollastonite	Epidote	Chlorite
	Talc	Sericite			
ALTERATION TYPE:	Skarn				
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER: Disseminated Stockwork
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
DIMENSION: 630 x 97 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Numerous zones of skarn mineralization are hosted in and adjacent to a limestone lens approximately 630 metres long by 97.5 metres wide (Assessment Report 13057).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock
ISOTOPIC AGE:	204 +/- 9 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Hornblende		

LITHOLOGY: Limestone
Granodiorite
Marble
Micaceous Meta Siltstone
Skarn
Porphyritic Monzonite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab
 COMMODITY

YEAR: 1984

COMMODITY	GRADE	
Silver	10.2900	Grams per tonne
Gold	0.2300	Grams per tonne
Copper	9.4000	Per cent
Zinc	1.4400	Per cent

COMMENTS: Taken from sample MT 23, one of two samples from garnet-magnetite skarn adjacent to and on the east side of a limestone lens.
 REFERENCE: Assessment Report 13057.

CAPSULE GEOLOGY

The VIP 7 showing is located approximately 12.8 kilometres north of Thutade Lake between Finlay River and Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The showing is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The VIP 7 showing is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The VIP 7 showing is underlain predominantly by granodiorite of the Early Jurassic Black Lake stock with several roof pendants of grey micaceous metasiltstone and white, coarsely crystalline marble of the Asitka and/or Takla groups. Late porphyritic monzonite dikes striking northwesterly, intrude both granodiorite and metasedimentary rocks.

An irregular north-northeast trending lens of limestone, approximately 630 metres long by 97.5 metre wide, and adjacent metasiltstones host numerous skarn outcrops comprising the VIP 7 showing. Skarn mineralization consists of massive garnet with variable amounts of magnetite, specularite, hematite, diopside, wollastonite, epidote and chlorite. The mineralization usually varies from epidote-rich to diopside-garnet-magnetite rich skarn in the core areas. Chalcopyrite, sphalerite, pyrite and specularite occur as disseminations and fracture fillings throughout skarn areas. Widespread talc-sericite-chlorite alteration of hostrocks occurs locally adjacent to skarn mineralization.

Sampling of these skarn outcrops had been conducted during property work from 1974 to 1984 yielding numerous anomalous silver, copper, zinc and gold results. Two samples taken from a garnet-magnetite skarn outcrop in 1984, on the eastern side of the limestone body, analysed as follows: sample MT 22 assayed 20.98 grams per tonne silver, 5.2 per cent copper, 0.34 gram per tonne gold, 0.011 per cent zinc and 0.0008 per cent lead; sample MT 23 assayed 10.29 grams per tonne silver, 9.4 per cent copper, 1.44 per cent zinc, 0.0002 per cent lead and 0.23 gram per tonne gold (Assessment Report 13057).

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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 701
REPORT: RGEN0100

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IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/11

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 048**

NATIONAL MINERAL INVENTORY: 094E2 Cu7

NAME(S): **VIP 30**, VIP, VIP 1-40,
GRACE, GRACE 1-14, GRACE 1-5,
ERROR, ERROR 1-8, FINLAY RIVER,
SKARN, SKARN 1-4, CONCHA,
CONCHA 1-7, JOK, JOK 1-6

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

LATITUDE: 57 09 42 N
LONGITUDE: 126 52 45 W
ELEVATION: 1200 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of drillholes 83-4 to 6 intersecting silver and copper-bearing skarn mineralization, approximately 13 kilometres north of Thutade Lake between Finlay River and Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 13057).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6337377
EASTING: 628265

COMMODITIES: Copper Gold Silver Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Pyrite Specularite
ASSOCIATED: Garnet Magnetite Specularite Hematite Diopside
Wollastonite Epidote Chlorite
ALTERATION: Garnet Diopside Wollastonite Epidote Chlorite
Talc Sericite

COMMENTS: Widespread talc alteration of hostrocks occurs locally adjacent to skarn mineralization (Assessment Report 13057).

ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stockwork

CLASSIFICATION: Skarn

TYPE: K01 Cu skarn

DIMENSION: 300 x 50 x 12 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: The showing consists of two skarn zones: one 300 by 50 by 12 metres, and the other 50 by 25 by 4 metres (Assessment Report 13057).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Upper Triassic
Permian
Lower Jurassic

GROUP

Takla
Asitka

FORMATION

Unnamed/Unknown Formation
Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Hornblende

LITHOLOGY:

Limestone
Granodiorite
Marble
Micaceous Meta Siltstone
Skarn
Porphyritic Monzonite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1984

COMMODITY	GRADE	
Silver	7.8500	Grams per tonne
Gold	1.4700	Grams per tonne
Copper	0.4700	Per cent
Zinc	0.0097	Per cent

COMMENTS: Grades are weighted average values from drillhole 83-3 for the interval 15.24 to 18.29 metres.

REFERENCE: Assessment Report 13057.

CAPSULE GEOLOGY

The VIP 30 prospect is located approximately 12.8 kilometres north of Thutade Lake between Finlay River and Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The prospect is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The VIP 30 prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The VIP 30 prospect is underlain predominantly by granodiorite of the Early Jurassic Black Lake stock with several roof pendants of grey micaceous metasilstone and white, coarsely crystalline marble of the Asitka and/or Takla groups. Late porphyritic monzonite dikes striking northwesterly, intrude both granodiorite and metasedimentary rocks.

The VIP 30 prospect consists of two skarn zones: an irregular north-northwest trending lens of limestone approximately 300 metres long by 50 metres wide by 12 metres apparent thickness and the other 50 metres long by 25 metres wide by 4 metres apparent thickness. Skarn mineralization consists of massive garnet with variable amounts of magnetite, specularite, hematite, diopside, wollastonite, epidote and chlorite. The mineralization usually varies from epidote-rich to diopside-garnet-magnetite rich skarn in the core areas. Chalcopyrite, sphalerite, pyrite and specularite occur as disseminations and fracture fillings throughout skarn areas. Widespread talc-sericite-chlorite alteration of hostrocks occurs locally adjacent to skarn mineralization.

A total of five drillholes were drilled on two of the skarn zones in 1984. Assay results from drill core yielded anomalous silver and copper. The best results were from a 50-metre long by 25-metre wide by 4-metre thick skarn zone cropping out 150 metres east of the main limestone-skarn zone. The weighted analytical results from drillhole 83-3 over the interval from 15.24 to 18.29 metres were 7.85 grams per tonne silver, 0.47 per cent copper, 1.47 grams per tonne gold and 0.0097 per cent zinc (Assessment Report 13057).

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 EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982, pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145, 291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989, pp. 409-415; 1991, pp. 207-216
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W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW
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DATE CODED: 1985/07/24
DATE REVISED: 1992/02/11

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **VIP 29**, VIP, VIP 1-40,
GRACE, GRACE 1-14, GRACE 1-5,
ERROR, ERROR 1-8, FINLAY RIVER,
SKARN, SKARN 1-4, CONCHA,
CONCHA 1-7, JOK, JOK 1-6

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

LATITUDE: 57 09 23 N
LONGITUDE: 126 52 23 W
ELEVATION: 1135 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of samples 52033 and H 225 of chalcopyrite-magnetite mineralization hosted in a sheared vein in granodiorite, approximately 13 kilometres north of Thutade Lake between Finlay River and Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 9494).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6336801
EASTING: 628653

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Magnetite
ASSOCIATED: Quartz
ALTERATION: Sericite Chlorite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 30 x 7 Metres STRIKE/DIP:
COMMENTS: The vein is traceable for up to 30 metres strike length, averaging 7.6 metres width. TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Granodiorite
Marble
Micaceous Meta Siltstone
Porphyritic Monzonite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1974
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 4.8000 Grams per tonne
Gold 0.0340 Grams per tonne
Copper 0.1200 Per cent

COMMENTS: Assay results from a 4.57-metre chip across the vein (sample H225).
REFERENCE: Property File - Hodgson and LeBel, (1974): Finlay River Report.

CAPSULE GEOLOGY

The VIP 29 showing is located approximately 12.8 kilometres north of Thutade Lake between Finlay River and Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The

CAPSULE GEOLOGY

showing is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The VIP 29 showing is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The showing is underlain predominantly by granodiorite of the Early Jurassic Black Lake stock with several roof pendants of grey micaceous metasilstone and white, coarsely crystalline marble of the Asitka and/or Takla groups. Late porphyritic monzonite dikes striking northwesterly, intrude both granodiorite and metasedimentary rocks.

The VIP 29 showing consists of a shear vein hosted in granodiorite of the Black Lake stock. The vein is traceable up to 30 metres and strikes south-southeast, averaging 7.62 metres width. At the southeast end of the exposed outcrop, malachite occurs over 6.10 to 7.62 metres width. The most intense chalcopyrite-magnetite mineralization is restricted to a 0.61 to 1.22-metre section in the centre of the zone. Sericite-chlorite alteration accompany mineralization.

Several samples were taken from this zone. Sample 52033, consisting of a grab sample of the best-looking material, assayed 92.92 grams per tonne silver and 0.59 per cent copper. A second sample (H 225) consisted of a 4.57-metre chip across the vein. Analytical results were 4.8 grams per tonne silver, 0.12 per cent copper and 0.034 gram per tonne gold (Property File - Hodgson and LeBel, (1974)).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/12

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 050**

NATIONAL MINERAL INVENTORY: 094E7 Au1

NAME(S): **SHASTA, SABLE, SHAS,**
SHA, JM, CREEK,
EAST, JOCK, RANIER,
CAYLEY, BAKER, UPPER RANIER

STATUS: Past Producer Open Pit Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 094E07W 094E02W UTM ZONE: 09 (NAD 83)
BC MAP:

LATITUDE: 57 15 13 N NORTHING: 6347401
LONGITUDE: 126 59 35 W EASTING: 621077
ELEVATION: 1310 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: JM zone, 2 kilometres northeast of Black Lake along Jock Creek,
between the Toodoggone and Sturdee rivers, 300 kilometres north of
Smithers (Fieldwork 1989). See also Baker (094E 026).

COMMODITIES: Gold Silver Zinc Copper Lead

MINERALS

SIGNIFICANT: Gold Silver Electrum Acanthite Pyrite
Sphalerite Galena Chalcopyrite

COMMENTS: Native gold and silver, electrum and argentite occur with sparse,
finely disseminated pyrite, sphalerite, galena and traces of
chalcopyrite (Bulletin 86).

ASSOCIATED: Quartz Calcite Carbonate
ALTERATION: K-Feldspar Quartz Chlorite Epidote Hematite

ALTERATION TYPE: Sericite Carbonate Adularia Sericitic Propylitic
MINERALIZATION AGE: Potassic Chloritic Sericitic Propylitic
Unknown

DEPOSIT

CHARACTER: Stockwork Breccia Vein

CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Cylindrical

MODIFIER: Faulted

DIMENSION: 500 Metres STRIKE/DIP: 150/90N TREND/PLUNGE:

COMMENTS: JM zone; steep northeast dips.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Stuhini	Unnamed/Unknown Formation	

LITHOLOGY: Dacitic Crystal Tuff
Feldspar Quartz Crystal Tuff
Crystal Lapilli Tuff
Chloritic Lapilli Tuff
Polymictic Lapilli Tuff
Dacite
Feldspar Quartz Biotite Porphyry
Pyroxene Feldspar Basalt Flow
Basalt Flow
Basalt

HOSTROCK COMMENTS: Attycelley Member of the Toodoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

COMMENTS: Well exposed Lower Jurassic volcanics northeast of the Bowser Basin.

INVENTORY

ORE ZONE: JM REPORT ON: Y

CATEGORY: Indicated YEAR: 1998
QUANTITY: 8000 Tonnes

COMMODITY GRADE
Gold 12.0000 Grams per tonne

COMMENTS: Gold equivalent in an extension to JM zone, Sable Resources Ltd.,
1998.

REFERENCE: Information Circular 1999-1, page 10.

INVENTORY

QUANTITY: 57147 Tonnes
COMMODITY _____ GRADE _____
Silver 514.2000 Grams per tonne
Gold 8.5700 Grams per tonne
COMMENTS: An ore shoot in the JM zone from the 1250-metre elevation to surface, a distance of 48 metres. May have been mined out.
REFERENCE: George Cross Newsletter No. 228 (December 26), 1990.

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Indicated YEAR: 1989
QUANTITY: 1259961 Tonnes
COMMODITY _____ GRADE _____
Gold 5.0700 Grams per tonne
COMMENTS: Drilling has established in situ geological reserves at a gold equivalent grade based on 2 grams per tonne gold equivalent cutoff grade for 3 zones. Some of this was mined from 1989 to 1991.
REFERENCE: George Cross News Letter No.140 (July 20), 1989.

CAPSULE GEOLOGY

The oldest rocks in the area are Permian limestones of the Asitka Group, which generally occur in thrust contact with Upper Triassic Stuhini (Takla) Group volcanics, and as roof pendants within the Early Jurassic Black Lake Suite. Stuhini Group rocks are dominantly alkaline to subalkaline, submarine mafic volcanics. Unconformably overlying the Stuhini Group are Lower Jurassic Hazelton Group rocks representing a probable island arc sequence of volcanics and associated sediments. The Lower Jurassic Toodoggone Formation represents a distinctive quartz-bearing facies of the Hazelton Group, and comprise dominantly calcalkaline, intermediate to felsic subaerial volcanics. The youngest rocks in the area are Upper Cretaceous-Eocene (?) Sustut Group sediments, which unconformably overlie the Toodoggone volcanics. Granodiorite and quartz monzonite of the Black Lake Suite intrude the Toodoggone and Stuhini rocks. The regional structure is dominated by major dextral strike-slip faults.

The Shasta property is underlain by two distinct lithologies of the Toodoggone volcanics. They are the pyroclastic series (Attycelley Member) and the epivolcaniclastic series (Saunders Member). The pyroclastic series unconformably overlies pyroxene feldspar phyric basalt flows and breccias of the Stuhini Group. In the central part of the property, the pyroclastics consist of dacitic feldspar quartz crystal tuffs, chloritic and heterolithic lapilli tuffs, and an underlying feldspar-quartz-biotite porphyry flow. These units all contain characteristic orange-weathering plagioclase feldspars. The epivolcaniclastic series consists of green to maroon feldspar phyric tuffs, heterolithic agglomerates, lahars and ash tuffs. These strata overlie the pyroclastic series, but are typically seen in fault contact with them.

The deposit occurs in a rotated fault block dominated by north to northwest striking normal and/or dextral faults. These are cut by minor east to northeast-striking crossfaults. Strata underlying the area generally dip gently north to northwest, coinciding with the regional attitude, except in a central fault-bounded panel of pyroclastic series rocks which dips steeply southwest. The north striking Shasta fault bounds one side of this rotated fault block, separating epivolcaniclastic from pyroclastic series rocks. This fault also forms the hangingwall of the Creek zone stockwork.

Mineralization and alteration are essentially restricted to the pyroclastic series and underlying Stuhini Group rocks. The overall lack of alteration and mineralization in the epivolcaniclastics suggest that these rocks were deposited, or displaced by faulting, after the mineralizing event. The absence of alteration at the hangingwall contact with the Creek zone supports this interpretation. However, the recent discovery of small isolated veins and alteration zones in these rocks, some distance into the hangingwall, suggests that the epivolcaniclastic rocks may, after all, have been deposited prior to mineralization.

The Shasta deposit is an epithermal multiphase quartz-carbonate stockwork/breccia vein deposit containing significant silver and gold mineralization. The deposit is spatially related to a dacitic dome of lower Middle Jurassic age. Significant mineralized zones are hosted by pyroclastic series rocks that were deposited on the flank of a coeval dacite dome. The Shasta deposit consists of multiple overlapping quartz-calcite stockwork/breccia systems that display generally similar characteristics. They occur as narrow (less than 1 metre) curvilinear breccias that pinch and swell within wider

CAPSULE GEOLOGY

(greater than 10 metre) sections of variable alteration and veining intensity over strike lengths of up to 500 metres. Quartz and calcite gangue occur individually in single-stage veins, as multistage banded veins and breccias, and also intimately mixed in a single stage. Both gangue minerals display open-space filling textures in banded veins and rare drusy vugs. Calcite is dominantly late, commonly occurring in the centre of earlier quartz veins and as the matrix in quartz vein and silicified wallrock breccias.

Native gold and silver, electrum and acanthite mineralization occurs erratically within quartz and calcite stockworks and breccias. Grades of mineralization appear to be independent of the intensity of alteration or brecciation. However, some of the highest silver values occurs in late-stage calcite breccia. Gold to silver ratios vary unsystematically from 1:10 to 1:100, with a deposit average of about 1:45.

Native gold and silver, electrum and acanthite mineralization is associated with finely disseminated grey sulphides and coarser grained pyrite. The main sulphide phases are pyrite, sphalerite, galena and minor chalcopryite, in decreasing order of abundance. Two distinct types of pyrite are recognized: disseminated euhedral crystals occurring in altered wallrock; and disseminated subhedral to irregular, fractured grains, with inclusions of galena, occurring in quartz and calcite gangue. The latter type is commonly associated with other base metal sulphides.

The fine grained grey sulphide is dominantly sphalerite, which occurs as irregular worm-like grains interstitial to quartz and calcite, and also as larger grains in contact with pyrite and/or galena. Some pyrite grains appear to be corroded and replaced by sphalerite. Most sphalerite contains abundant fine inclusions of exsolved chalcopryite.

Galena occurs as subrounded inclusions in pyrite, or fills fractures in pyrite and forms discrete irregular grains, interstitial to other sulphides, quartz and calcite. Chalcopryite occurs as exsolved inclusions in sphalerite, or interstitially between other sulphides and as free grains.

Scanning electron microscope analyses identified native gold and silver, electrum and acanthite. The gold and silver minerals occur as inclusions in base metal sulphides, as rims around sulphide grains, and minute free grains. Acanthite coexists with native gold, but not with electrum or native silver. Appreciable silver is also contained in galena.

Wallrock alteration is divided into four types: potassic, chloritic, phyllic and propylitic. Only potassic and chloritic alteration are directly associated with mineralization.

Propylitic alteration occurs on a regional scale and is characterized by an assemblage of chlorite + pyrite +/- carbonate, mainly replacing mafic phenocrysts and lapilli fragments in pyroclastic series rocks.

Potassic alteration is associated with early quartz veins, and characterized by pervasive silicification and potassium metasomatism, resulting in distinctive orange-pink bleaching of stockwork zones, up to tens of metres wide. This alteration may also occur as narrow envelopes, less than 1 centimetre across, around quartz veins. Generally, increasing intensity of potassium metasomatism has resulted in the progressive replacement of plagioclase phenocrysts, chloritic lapilli fragments and groundmass, in that order, by potassium feldspar and quartz. Minor sericite and clay minerals occurs locally in the most intensely altered zones, but this may be a later feature.

Chloritic alteration is dominantly, although not exclusively, associated with late-stage calcite veins and is represented by the assemblage chlorite +/- epidote +/- hematite. It occurs disseminated within veins and replacing wallrock fragments. Hematite and epidote also occur independently, in early to late fractures. This alteration has a more restricted distribution than potassic alteration.

Phyllic alteration is relatively uncommon, irregular and restricted. It is the latest event, overprinting both potassic and chloritic alteration, and usually destroying primary textures. It consists of pervasive sericite and finely disseminated pyrite, and does not appear to be spatially related to any particular features of the rock.

The Creek and JM zones host most of the known reserves and outcrop over strike lengths of 350 and 500 metres, respectively. The Creek zone strikes 180 degrees and dips moderately west. The JM zone strikes 150 degrees and dips steeply northeast. These zones appear to merge to the north. The Shasta fault forms the hangingwall of the Creek zone at surface, but appears to diverge from the zone as the fault attitude flattens with depth. The Creek and JM zones are

CAPSULE GEOLOGY

hosted by two similar units of feldspar quartz crystal lapilli tuff (one with heterolithic fragments, the other with dominantly chloritic fragments) which do not appear to exert lithological control on mineralization or alteration. The Creek zone is characterized by a well-defined stockwork system with strong silicification and coeval potassic alteration. Phyllic alteration occurs locally. Late calcite veining with associated chloritic alteration is abundant lower in the zone. Calcite veinlets continue through the footwall of the Creek zone and may persist for several tens of metres into relatively unaltered rock. Silver and gold mineralization occur in both quartz and calcite veins, usually intimately associated with blebs of fine-grained pyrite. In calcite veins, pyrite is commonly associated with chloritic alteration of wallrock fragments. At higher levels in the zone, sulphide and silver-gold mineralization in quartz veins is commonly fine grained, and calcite veins are typically barren. At lower elevations, however, mineralization in calcite veins is usually coarse grained and quartz veins are sparsely mineralized.

Quartz and calcite breccias occur irregularly throughout the stockwork zone. Typically, wide (greater than 10 centimetre) single-stage veins of either gangue mineral are barren or poorly mineralized, whereas narrower veins, multistage veins, and particularly mixed quartz-calcite stage veins tend to carry abundant mineralization. Sulphide and silver-gold mineralization tends to precipitate at the margins of veins and at contacts between different stages of gangue.

The JM zone is generally similar to the Creek zone, but lacks the well-defined structural control of the hangingwall fault of the Creek zone. Potassic alteration and quartz stockworks appear more pervasive and somewhat stronger, while calcite veins and chloritic alteration are more restricted. Hematite and epidote alteration is locally abundant in the wallrock. Early, narrow (less than 2 centimetre) quartz veins are commonly grey to green and fine grained. Late calcite breccias are usually wider (10-30 centimetres), and contain a coarse white calcite matrix that is usually barren. Gold and silver mineralization occurs in both quartz and calcite veins, but more commonly in narrow (less than 1 centimetre) veinlets toward the footwall of the zone. Two isolated occurrences of silver-gold mineralization in intensely silicified and potassic altered wallrock were noted in drill core, suggesting that early stages of quartz may be mineralized.

There are five stages of quartz and calcite vein filling in the Creek and JM zones: Quartz I, II and III, and Calcite I and II. Quartz I comprises silicification and associated potassic alteration, and is widespread but only rarely mineralized. Quartz II consists of fine grained, grey to clear quartz in narrow veins that are frequently well mineralized. Quartz III is fine grained, dark grey to green, commonly forms wide breccias, and is generally barren. Calcite I is white to green, associated with chloritic alteration, is commonly well mineralized and frequently occurs with Quartz II as a single intimately mixed stage or as breccia matrix. Calcite II is white or cream coloured, very coarse grained and generally forms barren late-stage veins. The bulk of silver-gold and sulphide mineralization is contained in Quartz II and Calcite I stages (Fieldwork 1989).

The O zone, situated 500 metres southeast of the JM zone, strikes 130 degrees, dips steeply northeast and is hosted by feldspar quartz crystal lapilli tuffs and an overlying polymictic agglomerate. Alteration and mineralization in the O zone is markedly different from that of the Creek and JM zones. Early alteration is characterized by strong pervasive epidote, chlorite and hematite that is overprinted by moderate potassic alteration and weak silicification. Intense stockworks and breccias form well-defined zones with sharp boundaries, but are poorly mineralized. Veins are quartz dominant, and although calcite is present, it is not intimately mixed with quartz as in the Creek and JM zones. Late fractures with narrow (less than 1 centimetre) potassium feldspar and quartz envelopes are commonly filled by calcite with abundant epidote and pyrite. Analytical results from diamond drilling in 1987 yielded assays of 25.36 grams per tonne gold across 0.97 metre (Northern Miner - November 16, 1987).

The outlying East zone, 750 metres northeast of the JM zone, outcrops in the feldspar-biotite-quartz porphyry unit. The zone strikes approximately northwest. Pyrite is abundant in quartz veins and is locally semimassive. Chalcopyrite is common and occurs with galena along hairline fractures in moderately potassically altered wallrock. Silver-gold mineralization occurs in both quartz and calcite veins, but is concentrated in pyrite-rich quartz veins. Late potassic alteration is superimposed on strongly epidote altered

CAPSULE GEOLOGY

wallrock. A distinctive alteration type confined to the East zone is the conversion of plagioclase to dark green, translucent sericite (?) accompanied by pervasive phyllic alteration.

The Rainier zone, 300 metres south of the Creek zone, is hosted by feldspar quartz crystal lapilli tuff and strikes roughly north with a subvertical dip. The zone has been subjected to extensive faulting and its morphology is unclear. Analytical results from diamond drilling in 1987 yielded assays of 8.77 grams per tonne gold and 90.84 grams per tonne silver across 2.4 metres (Vancouver Stockwatch - November 24, 1987).

The Jock zone, outcropping immediately northeast of the JM zone, is also poorly defined due to complex faulting. Mineralization and alteration styles of the Rainier and Jock zones are similar to the Creek and JM zones respectively. Analytical results from diamond drilling in 1987 at the Jock zone yielded assays of 1.67 grams per tonne gold and 114.49 grams per tonne silver across 8.1 metres (Northern Miner - November 16, 1987).

Eleven mineralized zones are recognized on the property. Recent exploration has shown that the Rainier, Cayley, Baker, Upper Rainier, JM and Creek zones are all segments of a continuous vein system.

An open pit and underground operation at the Shasta property has processed 40,819 tonnes of ore since mill start-up in October 1989 (George Cross News Letter No. 140 (July 20), 1990). The ore is mined from the JM zone which has been developed over a strike length of 228 metres with widths up to 12 metres. Approximately 137 metres of the strike length carries ore grade mineralization (George Cross News Letter No. 208 (October 26), 1990). The ore is trucked about 11 kilometres to the Baker mine mill (094E 026) for processing. The mill was purchased by Sable Resources Ltd. and has been extensively rehabilitated and expanded.

A 1989 drill program established in situ geological reserves of 1,259,961 tonnes at 5.07 grams per tonne gold equivalent based on 2 grams per tonne gold equivalent cutoff grade for three main zones (George Cross News Letter No. 140 (July 20), 1990).

A new ore shoot opened underground on the JM zone has indicated reserves of 57,147 tonnes grading 8.57 grams per tonne gold and 514.2 grams per tonne silver from the 1250-metre elevation to surface, a distance of 48 metres. The zone is open below the 1250-metre elevation (George Cross News Letter No. 228 (November 26), 1990).

Mining from 1989 to August 1991 produced 122,533 tonnes of ore yielding 32,932 kilograms of silver and 601 kilograms of gold. Some of the 1991 ore (about 10,000 tonnes) was from the Multinational B zone of the Baker Mine (094E 026).

In 1998, Sable Resources drilled 9 holes and outlined about 8000 tonnes grading 12 grams per tonne gold equivalent in an extension to the JM zone (Information Circular 1999-1, page 10). They planned to mine up to 10,000 tonnes by open-pit methods, however mining and milling was deferred until 1999.

Sable mined 8580 tonnes of gold-silver ore in 2000. Head grades averaged 10.29 grams per tonne gold equivalent (Information Circular 2001-1, p. 5). Trenching and induced polarization programs were completed on the Vein A and B zones.

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IPDM Nov/Dec 1983; Jan/Feb 1984
MIN REV July/Aug 1983
N MINER Dec. 1973; Nov.3 1983; April 5; May 24, 1984; July 18, 1985; A
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Placer Dome File
EMPR OF 1998-10

DATE CODED: 1985/07/24
DATE REVISED: 1990/08/02

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094E 051**

NATIONAL MINERAL INVENTORY: 094E6 Pb4

NAME(S): **GORD 18**, GORD, GORD 1-40,
GORD 1-4, MUL, MUL 1-4,
MET, MET 1-2

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6373968
EASTING: 617494

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 29 35 N
LONGITUDE: 127 02 23 W
ELEVATION: 1740 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: Mineral location number 1; a mineralized quartz vein within a larger gossanous zone on an east-trending ridge, 3.0 kilometres northeast of Mount Gordonia. The prospect is located in the north-central portion of the Toodoggone gold camp, approximately 300 kilometres north of Smithers (Assessment Report 5194).

COMMODITIES: Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite
ASSOCIATED: Quartz Pyrite
ALTERATION: Silica Carbonate Limonite

COMMENTS: The quartz vein occurs in silicified, bleached and carbonate altered volcanic rocks in pyrite and limonite altered zones (Assessment Report 5194).

ALTERATION TYPE: Silicific'n Carbonate Argillic Oxidation Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 4 x 1 Metres STRIKE/DIP: 045/
COMMENTS: The vein is 60 centimetres wide by 3.66 metres long on surface and strikes approximately 045 degrees (Assessment Report 5194).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Jurassic	Takla	Unnamed/Unknown Formation	Unnamed/Unknown Informal

LITHOLOGY: Feldspar Porphyritic Andesite Flow
Cherty Andesite
Porphyritic Andesitic Pyroclastic
Andesite
Tuff
Agglomerate
Monzonite Dike
Monzonite

HOSTROCK COMMENTS: Monzonite dikes and small stocks are related to Early to Middle Jurassic plutons to the northwest and south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP:
GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1974
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 16.0000 Grams per tonne
Copper 0.1000 Per cent
Lead 0.3032 Per cent
Zinc 0.4000 Per cent

COMMENTS: Zinc is greater than 0.4 per cent. A 1.83-metre chip sample taken across the vein.

REFERENCE: Assessment Report 5194.

CAPSULE GEOLOGY

The Gord 18 prospect is located 3.0 kilometres northeast of Mount Gordonia, east of Mulvaney Creek. The prospect is 300 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toadoggone gold camp. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Gord 18 prospect is underlain by a thick sequence of volcanics rocks consisting of green and purple feldspar porphyritic andesite flows, cherty andesites and porphyritic andesitic pyroclastics, ranging from tuff to agglomerate (Assessment Report 5194). Outcrops consisting of pink monzonite dikes and small stocks are scattered around the Gord 18 prospect. A major fault intersection between an north and northwest-striking fault occurs about 290 metres south of the prospect.

Mineralization is part of a large gossanous area that can be traced for several tens of metres across a ridge. Mineralization consisting of chalcopyrite, galena, sphalerite and pyrite occur in quartz veins. Alteration consists of associated envelopes of silicification, carbonate and argillic alteration, and oxidization and leaching. A quartz vein 60-centimetres wide contains pods of galena and sphalerite with minor chalcopyrite. This was traced over a 3.66-metre section.

A 1.83-metre wide chip sample of this mineralization analysed 16 grams per tonne silver, greater than 0.4 per cent zinc, 0.3032 per cent lead and 0.100 per cent copper (Assessment Report 5194).

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IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 715
REPORT: RGEN0100

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DATE CODED: 1985/07/24
DATE REVISED: 1992/09/26

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 052**

NATIONAL MINERAL INVENTORY: 094E6 Pb4

NAME(S): **GORD 9**, GORD, GORD 1-40,
 GORD 1-4, MUL, MUL 1-4,
 MET, MET 1-2

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094E06E
 BC MAP:
 LATITUDE: 57 29 23 N
 LONGITUDE: 127 01 52 W
 ELEVATION: 1750 Metres
 LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
 UTM ZONE: 09 (NAD 83)
 NORTHING: 6373612
 EASTING: 618021

COMMENTS: Mineral location number 2, a mineralized zone within a larger gossanous zone on an east-trending ridge, 3.0 kilometres northeast of Mount Gordon. The showing is located in the north-central portion of the Toadoggonne gold camp, approximately 300 kilometres north of Smithers (Assessment Report 5194).

COMMODITIES: Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite
 ASSOCIATED: Quartz Pyrite
 ALTERATION: Carbonate Limonite Pyrite

COMMENTS: The mineralized zone is hosted in rusty carbonate-altered andesite with widespread disseminated pyrite (Assessment Report 5194).

ALTERATION TYPE: Silicific'n Carbonate Argillic Oxidation Leaching
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Disseminated
 CLASSIFICATION: Epigenetic Hydrothermal
 DIMENSION: 50 x 1 Metres STRIKE/DIP: 360/
 COMMENTS: The mineralized zone is 60 to 152 centimetres wide by about 50 metres long and strikes 360 degrees (Assessment Report 5194).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Jurassic			

LITHOLOGY: Feldspar Porphyritic Andesite Flow
 Cherty Andesite
 Porphyritic Andesitic Pyroclastic
 Andesite
 Gossan
 Tuff
 Agglomerate
 Monzonite Dike
 Monzonite

HOSTROCK COMMENTS: Monzonite dikes and small stocks are related to Early to Middle Jurassic plutons to the northwest and south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
 TERRANE: Stikine
 METAMORPHIC TYPE: Regional RELATIONSHIP:
 GRADE: Greenschist
 Zeolite

COMMENTS: Located in the north-central portion of the Toadoggonne gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1974
 SAMPLE TYPE: Chip
 COMMODITY GRADE
 Silver 30.0000 Grams per tonne
 Copper 0.1075 Per cent
 Lead 0.4300 Per cent
 Zinc 1.9000 Per cent

COMMENTS: A 91-centimetre chip sample.
 REFERENCE: Assessment Report 5194.

CAPSULE GEOLOGY

The Gord 9 prospect is located 3.0 kilometres northeast of Mount Gordonia, east of Mulvaney Creek. The prospect is 300 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toadoggonne gold camp. The occurrence is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Gord 9 prospect is underlain by a thick sequence of volcanic rocks consisting of green and purple feldspar porphyritic andesite flows, cherty andesites and porphyritic andesitic pyroclastics, ranging from tuff to agglomerate (Assessment Report 5194). Outcrops consisting of pink monzonite dikes and small stocks are scattered around the occurrence and are related to Early to Middle Jurassic plutons to the northwest and south. A major fault intersection between a north and a northwest-striking fault occurs about 290 metres south of the prospect.

Mineralization is part of a large gossanous area that can be traced for several tens of metres across a ridge. Mineralization consisting of chalcopyrite, galena, sphalerite and pyrite occur in quartz veins. Alteration consists of associated envelopes of silicification, carbonate and argillic alteration, and oxidization and leaching.

A series of branching zones 60 to 152 centimetres wide and about 50 metres long of rusty carbonate-altered andesite contain widespread pyrite and scattered clots of galena, sphalerite and chalcopyrite.

A 91-centimetre wide chip sample of this mineralization analysed 30 grams per tonne silver, 1.9 per cent zinc, 0.43 per cent lead and 0.1075 per cent copper (Assessment Report 5194).

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 718
REPORT: RGEN0100

BIBLIOGRAPHY

Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/07/24
DATE REVISED: 1992/09/26

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

north-central part of the Toodoggone gold camp. Smithers is located 310 kilometres to the south.

The Har prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Har prospect is underlain by volcanics of the McClair Creek Member of the Toodoggone Formation. At this location they are composed of interbedded porphyritic flows, flow breccias, crystal tuffs and crystal lithic breccias. Minor volcanoclastic sediments are also present. Intensely fractured, porphyritic monzodiorite dikes cut the above units.

These lithologies show generally weak chlorite and carbonate alteration. Feldspar matrix and phenocrysts are weakly affected by sericitic and argillic alteration. Takla volcanics outcrop immediately to the east.

The Har prospect originally consisted of a quartz-carbonate vein mineralized with sporadic galena, sphalerite, chalcopyrite and pyrite. Subsequent property work, in 1986, has discovered a quartz vein with galena cutting porphyritic andesite, approximately 350 metres east of the original vein. Assay results from grab sample GD-86-3007 of this material, were 0.375 gram per tonne gold and 3.5 grams per tonne silver.

In 1988, a more comprehensive property exploration program discovered three other significant mineralized zones within 200 metres of the original vein. Sample GD-88-018 and 019 were taken across high-grade massive sulphide seams 10 to 15 centimetres thick. The seams strike 100 degrees and dip 25 degrees to the southwest. The former sample assayed 0.171 gram per tonne gold, 21.94 grams per tonne silver, 4.56 per cent lead and 22.23 per cent zinc. The latter sample analysed insignificant gold but 12.0 grams per tonne silver, 5.8 per cent lead and 1.16 per cent zinc. Sample GD-88-012 was taken from limestone mineralized with ribbons of sphalerite and galena over approximately 1 metre. The sample yielded insignificant gold but 7.89 grams per tonne silver, 0.66 per cent lead and 2.15 per cent zinc. A rebrecciated quartz-sulphide vein with minor galena, sphalerite and pyrite was sampled. Sample GD-88-008 from this vein assayed insignificant gold, 20.57 grams per tonne silver, 0.32 per cent lead and 0.59 per cent zinc (Assessment Report 18335).

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N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1

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DATE CODED: 1985/07/24
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CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 054**

NATIONAL MINERAL INVENTORY:

NAME(S): **JIMO**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 37 54 N
LONGITUDE: 127 24 30 W
ELEVATION: 1955 Metres

NORTHING: 6388819
EASTING: 595041

LOCATION ACCURACY: Within 500M

COMMENTS: The location is centred on mineralized outcrops, 11 kilometres east of Mount McNamara and 9.5 kilometres northwest of Claw Mountain (Assessment Report 18465, Map 1).

COMMODITIES: Copper Silver Lead

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Galena Pyrite
ASSOCIATED: Quartz Calcite Hematite
ALTERATION: Limonite Clay Chrysocolla Silica Malachite
Azurite Epidote Chlorite

ALTERATION TYPE: Argillic Silicific'n Oxidation Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Shear Breccia
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Sheared Fractured
DIMENSION: 9 x 4 Metres STRIKE/DIP: 160/80E TREND/PLUNGE:
COMMENTS: The attitude is that of the bedding as reported in Assessment Report 5434. The dimensions given are for one stockwork zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE: Upper Triassic GROUP: Takla FORMATION: Unnamed/Unknown Formation IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Andesite
Basalt
Trachyandesite
Tuff
Andesite Dike
Agglomerate

HOSTROCK COMMENTS: All lithologies are variably fractured and brecciated.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1976
SAMPLE TYPE: Chip
COMMODITY: Silver GRADE: 21.9400 Grams per tonne
Copper 0.3800 Per cent

COMMENTS: The chip sample was collected over 3.7 metres.

REFERENCE: Property File - Jimo File, Map 6.

CAPSULE GEOLOGY

The Jimo showing, discovered in 1974, is situated 11 kilometres east of Mount McNamara and 9.5 kilometres northwest of Claw Mountain.

The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz

CAPSULE GEOLOGY

monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Jimo area is underlain by Takla Group volcanic and volcanoclastic rocks striking 160 degrees and dipping 080 degrees easterly. Basalt, trachyandesites, andesites, andesite dikes, tuffs and agglomerates comprising Takla Group stratigraphy are locally sheared, fractured and brecciated. Ubiquitous chlorite and epidote are evidence of pervasive weak propylitic alteration. Close to the shear and breccia zones, the propylitic alteration is overprinted by argillic alteration and silicification.

Many of the shear and breccia zones are healed with quartz, calcite and hematite. Quartz and calcite veins and stockworks are common within the shear zones. Widespread oxidation has developed limonite and malachite on many fracture surfaces. Pyrite, hematite and minor chalcopryrite are disseminated throughout the units. Copper mineralization consisting of chalcopryrite, bornite, chalcocite, malachite, chrysocolla and azurite is concentrated in the shear and breccia zones. The copper minerals are often hosted within quartz-calcite veins and stockworks associated with pyrite and hematite. Galena is almost exclusively found within tuffs and brecciated tuffs.

The showing is exposed along a west-trending ridge and in the valley of a west-flowing stream. Mineralized outcrops occur sporadically over a 500 by 400 metre area along the ridge and in the valley bottom. A 9 by 4 metre quartz-calcite stockwork zone, hosted within andesite, along the ridge, yielded 0.38 per cent copper and 21.94 grams per tonne silver over 3.7 metres (Property File - Jimo File, Map 6). A grab sample of a 20 centimetre wide quartz-calcite vein hosted within brecciated tuff along the valley floor assayed 34.0 grams per tonne silver (Sample DM-53, Assessment Report 18465).

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N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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GSC MAP 14-1973

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FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 056**

NATIONAL MINERAL INVENTORY:

NAME(S): **BANSHEE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E13E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 56 28 N
LONGITUDE: 127 40 27 W
ELEVATION: 1720 Metres

NORTHING: 6422924
EASTING: 578495

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Trench C, exposing streaks and disseminations of pyrite and sphalerite in metarhyolite. The Banshee showing is located 25 kilometres northwest of Mount Albert Dease, north and west of Park Creek (Assessment Report 9615). Dease Lake is 135 kilometres to the northwest.

COMMODITIES: Copper Lead Zinc Silver

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena Chalcopyrite

ASSOCIATED: Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE

Paleozoic

GROUP

Unnamed/Unknown Group

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Meta Rhyolite
Dacitic Andesitic Pyroclastic
Dacite
Felsic Tuff
Andesite
Andesitic Basaltic Volcanic
Argillite
Meta Rhyolite Tuffite
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Cassiar Mountains

RELATIONSHIP: Pre-mineralization

GRADE: Greenschist

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1981

SAMPLE TYPE: Chip

COMMODITY

GRADE

Silver	9.4000	Grams per tonne
Copper	0.0170	Per cent
Lead	0.0120	Per cent
Zinc	0.0550	Per cent

COMMENTS: The best grades from samples taken from Trench C.

REFERENCE: Assessment Report 9615.

CAPSULE GEOLOGY

The Banshee showing is located 25 kilometres northwest of Mount Albert Dease, north and west of Park Creek (Assessment Report 9615). Dease Lake is about 135 kilometres to the northwest.

The Banshee showing is underlain by a mixed metavolcanic-metasedimentary assemblage. Early regional mapping correlated these rocks with the Permian Asitka Group based on lithological similarities (Geological Survey of Canada Open File 483). A tentative age of Devonian to Permian is assigned to these rocks (Geological Survey of Canada Paper 76-1A, pages 87-90). Fossil evidence suggests a Mississippian age for at least part of this sequence (Geological Survey of Canada Paper 80-1B, pages 207-211). Upper Triassic Takla Group rocks lie to the northwest of the showing (Assessment Report 9615). To the southwest lie Late Triassic

CAPSULE GEOLOGY

granitoids of the Stikine Terrane and the Early to Middle Jurassic Three Sisters granitoid suite. To the southeast and northeast, are Late Triassic to Early Jurassic granitoid rocks in the Stikine and Quesnel terranes west and east of the Kutcho fault (Open File 1990-12).

On a property scale, rocks surrounding the Banshee showing have been divided into four units. The first of these units is a mixed metavolcanic-metasedimentary unit consisting of alternating intermediate pyroclastics and argillites. These intermediate pyroclastic rocks, dacitic to andesitic in composition, are composed of quartz, sericite, chlorite, actinolite, limonite and minor calcite. Metarhyolite overlies the previous unit. It is composed of 70 per cent quartz, 28 per cent sericite and 2 per cent combined iron oxides and pyrite. Locally this unit contains up to 3 per cent disseminated pyrite and minor galena. At the Banshee showing, this unit hosts pyrite, sphalerite, chalcopyrite and minor galena. The most widespread of the four units is a metavolcanic unit, consisting of mafic volcanic rock with felsic tuff layers. Composition ranges from andesitic to basaltic. These three units are overlain by a cherty metarhyolite tuffite unit. Quartz, feldspar, actinolite, calcite and iron oxides comprise this unit. A weak to strong foliation is pervasive in all units except the cherty metarhyolite tuffite.

The rocks underlying the Banshee showing have undergone two phases of deformation and have been metamorphosed to greenschist facies. The first phase of deformation was penetrative and produced a pervasive foliation. The second, weaker phase of deformation produced local kink bands and weakly defined foliation. A major fault striking north-northwest is found immediately east of the Banshee showing.

Mineralization consists of patchy areas in metarhyolite and quartz veins, of up to 5 per cent pyrite, 1 per cent sphalerite, 1 per cent galena and 0.5 per cent chalcopyrite (Assessment Report 6915). Three trenches were dug in response to rock samples yielding assay values of 10.3 grams per tonne silver, 0.19 gram per tonne gold, 1.79 per cent zinc, 0.12 per cent copper and 0.06 per cent lead (Assessment Report 9615). Analytical results from trenches were lower than rock samples. The best results were from Trench C, which were 9.4 grams per tonne silver, 0.16 gram per tonne gold, 0.055 per cent zinc, 0.017 per cent copper and 0.012 per cent lead (Assessment Report 9615).

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DATE CODED: 1985/07/24
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FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 057**

NATIONAL MINERAL INVENTORY:

NAME(S): **MEX**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 12 15 N
LONGITUDE: 126 40 07 W
ELEVATION: 1820 Metres

NORTHING: 6342536
EASTING: 640835

LOCATION ACCURACY: Within 500M

COMMENTS: Sample 81MRT-4 of monzonite, southeast of a major gossan, contains disseminated and fracture-filling chalcocite and chalcopyrite, located 3.75 kilometres northwest of Giegerich Peak, about 280 kilometres north of Smithers (Assessment Report 9384).

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcocite Chalcopyrite
ASSOCIATED: Pyrite Magnetite Quartz
ALTERATION: Epidote Chlorite Silica Pyrite Limonite
Jarosite
ALTERATION TYPE: Propylitic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stockwork
CLASSIFICATION: Porphyry Epigenetic Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 400 x 250 Metres STRIKE/DIP:
COMMENTS: Copper mineralization in spotty patches is exposed on a ridge over an area approximately 400 by 250 metres (Assessment Report 6763). TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Unnamed/Unknown Informal
Lower Jurassic			

LITHOLOGY: Quartz Monzonite
Monzonite
Diorite
Syenite
Homblende Plagioclase Andesite Flow
Homblende Plagioclase Andesite Tuff
Homblende Plagioclase Andesite Breccia
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite
COMMENTS: Located in the southeastern corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Grab
COMMODITY GRADE
Copper 0.1456 Per cent
COMMENTS: Sample 81MRT-4, one of four samples taken from monzonite.
REFERENCE: Assessment Report 9384.

CAPSULE GEOLOGY

The Mex prospect is located 3.75 kilometres northwest of Giegerich Peak, some 280 kilometres north of Smithers. The Mex prospect lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and

CAPSULE GEOLOGY

Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Mex prospect is underlain by several phases of granitoid intrusive rocks ranging from quartz diorite to syenite, that have been hydrothermally altered and locally pyritized. The contact between this intrusive body and Toodoggone Formation volcanic rocks lies less than 1 kilometre to the northwest and trends southwest. Hornblende plagioclase phyric andesite flows, tuffs and breccias comprise Toodoggone volcanics to the northwest of the Mex prospect.

Alteration of the intrusions underlying the Mex prospect consists of moderate to strong propylitic alteration and silicification. Replacement of mafic minerals by epidote and chlorite varies from greater than 50 per cent in the west, decreasing to less than 50 per cent in the east. Silicification consists of, from east to west, minor quartz veining and blebs to veining up to 3 millimetres wide with irregular spacing and occupying up to 80 per cent by rock volume. A northwest-trending gossan crops out for approximately 1000 by 500 metres along a ridge immediately to the northwest of the Mex prospect. Jarosite and limonite occur as fracture coatings, clots and disseminations.

To date, two gold-bearing intrusions have been recognized at the Mex prospect. One is a pyritic (up to 7 per cent) and silicified quartz monzonite phase and the other is a monzonite with 0.5 to 10 per cent magnetite.

Mineralization consists of spotty patches of disseminated and fracture-controlled chalcocite and lesser chalcopyrite over an area of approximately 400 by 250 metres. Both minerals are very fine grained and rarely comprise more than 0.25 per cent rock volume. Pyrite or magnetite are very common, ranging from 0.25 to 10 per cent in modal abundance; averaging 1 per cent.

Assay results obtained from rock chip samples taken in 1971 from an altered zone of quartz monzonite to monzonite ranged from less than 0.010 to 0.780 gram per tonne gold (Assessment Report 9384). In 1981, 10 rock chip samples were taken mostly from the alteration zone. All but two samples yielded enrichment in gold, from 0.010 to 0.168 gram per tonne.

Multi-element geochemistry was completed on only 4 samples, all from monzonite. All were anomalous in copper, (0.0195 to 0.1456 per cent) weakly anomalous in silver (1.2 to 2.6 grams per tonne) and molybdenum (0.0010 to 0.0047 per cent) (Assessment Report 9384). Sample 81MRT-4 yielded the highest assay values for all elements but gold and zinc. The results were 0.0068 gram per tonne gold, 2.6 grams per tonne silver, 0.1456 per cent copper, 0.0099 per cent lead, 0.0199 per cent zinc and 0.0010 per cent molybdenum (Assessment Report 9384).

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- GSC BULL 270
- GSC OF 306; 483

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 730
REPORT: RGEN0100

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IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/25

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 058**

NATIONAL MINERAL INVENTORY:

NAME(S): **AMIGO**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 11 02 N
LONGITUDE: 126 55 15 W
ELEVATION: 1520 Metres

NORTHING: 6339773
EASTING: 625670

LOCATION ACCURACY: Within 500M

COMMENTS: Location of sample JCC-R-419 taken from an outcrop of mineralized skarn 800 metres long by 600 metres wide, approximately 2.25 kilometres southwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 6762).

COMMODITIES: Copper Zinc Silver Lead

MINERALS

SIGNIFICANT:	Sphalerite	Chalcopyrite	Galena	Tetrahedrite	
ASSOCIATED:	Garnet	Diopside	Wollastonite	Calcite	
ALTERATION:	Garnet	Diopside	Wollastonite	Calcite	Malachite
ALTERATION TYPE:	Skarn		Oxidation		
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER: Stratabound Disseminated
CLASSIFICATION: Skarn Replacement
TYPE: K02 Pb-Zn skarn
DIMENSION: 800 x 600 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The main skarn outcrop has been mapped as being 800 metres long by 600 metres wide and is part of a larger zone approximately 4000 metres long by 600 metres wide and trending northerly.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Limestone
Chlorite Schist
Andesitic Volcanic
Quartz Diorite
Quartz Monzonite
Skarn
Porphyritic Quartz Monzonite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1978
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Silver	178.0000 Grams per tonne
Copper	3.2500 Per cent
Lead	0.0236 Per cent
Zinc	3.7300 Per cent

COMMENTS: Sample JCC-R-419 of mineralized skarn.
REFERENCE: Assessment Report 6762.

CAPSULE GEOLOGY

The Amigo prospect is located approximately 2.25 kilometres southwest of Drybrough Peak, some 280 kilometres north of Smithers. The Amigo prospect lies within the Omineca-Cassiar mountains at the

CAPSULE GEOLOGY

southern end of the Toodoggone gold camp. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Amigo prospect is underlain by the Early Jurassic Black Lake stock and a pendant of Asitka Group limestone, chlorite schists and andesitic volcanics. The composition of the Black Lake stock is quartz diorite to quartz monzonite in this area. The Permian limestone unit is at least 150 metres thick and varies from medium bedded (centimetre-scale) to very thickly bedded (metre-scale). One 1 to 2-metre wide porphyritic quartz monzonite dike was observed nearby. The Amigo prospect consists of a number of mineralized skarn outcrops forming a northerly trending zone approximately 4000 metres long by 600 metres wide.

Traces of galena, tetrahedrite, chalcopyrite, sphalerite and malachite staining occur in the main skarn exposure located at the headwaters of a southwest-flowing creek. Skarn minerals associated with this prospect include variable amounts of garnet, diopside, wollastonite and calcite. The exposure has been mapped being approximately 800 metres long by 600 metres wide.

Rock sample JCC-R-419 from this exposed skarn zone was assayed in 1978 with the following results: 178.0 grams per tonne silver, 3.73 per cent zinc, 3.25 per cent copper and 0.0236 per cent lead (Assessment Report 6762). In 1982, a sample taken from nearby yielded assay values of up to 68.57 grams per tonne and less than 0.343 gram per tonne gold (Assessment Report 11106). Other samples from skarn exposures comprising the Amigo prospect yielded up to 51.43 grams per tonne silver and less than 0.343 gram per tonne gold (Assessment Report 11106).

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- IPDM Nov/Dec 1983
- MIN REV September/October, 1982; July/August, 1986
- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- W MINER April, 1982
- WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/18

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 059**

NATIONAL MINERAL INVENTORY:

NAME(S): **STONE**, EAGLE, COUGAR

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 32 18 N
LONGITUDE: 127 08 22 W
ELEVATION: 1920 Metres

NORTHING: 6378839
EASTING: 611379

LOCATION ACCURACY: Within 500M

COMMENTS: Location is centred on rock sample 32398 (Assessment Report 18338, Figure 5b). The Stone showing is located on Breccia Peak and at the headwaters of McClair Creek.

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Limonite Malachite Epidote
ALTERATION TYPE: Oxidation Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Toodoggone	
Lower Jurassic			Black Lake Stock

LITHOLOGY: Porphyritic Andesite
Lapilli Tuff
Rhyolite
Volcanic Breccia
Augite Porphyry Basalt Flow
Basalt
Siltstone
Tuff
Andesite Dike
Foliated Granodiorite

HOSTROCK COMMENTS: Toodoggone volcanics are part of the McClair Creek Member (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY
Silver 42.2000 Grams per tonne
Copper 1.7900 Per cent
COMMENTS: Sample 32398.
REFERENCE: Assessment Report 18338.

CAPSULE GEOLOGY

The Stone showing is located on Breccia Peak and at the head waters of McClair Creek.

The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with

CAPSULE GEOLOGY

Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Stone showing is underlain by Takla Group augite porphyry basalt and andesite flows, siltstone, tuffs and andesite dikes, and Toodoggone Formation porphyritic andesite, lapilli tuff, rhyolite and volcanic breccia (McClair Member). These units are intruded by foliated granodiorite of the Early Jurassic Black Lake stock.

Disseminated chalcopyrite and pyrite occurs sporadically throughout the area in all units. Epidote, caused by weak propylitic alteration, is common in the volcanic units. Widespread oxidation has developed large areas of limonite and lesser malachite staining. A grab sample of heavily malachite stained Toodoggone Formation feldspar porphyry from the east side of Breccia Peak assayed 1.79 per cent copper and 42.2 grams per tonne silver (sample 32398, Assessment Report 18338). A sample of rhyolite from the same area assayed 2.4 grams gold and 3.2 grams silver (sample 32405, Assessment Report 18338). These samples are not typical, most yielded much lower values.

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1987-C328-C346; 1988-C185-C194
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N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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DATE CODED: 1985/07/24
DATE REVISED: 1992/12/13

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 060**

NATIONAL MINERAL INVENTORY:

NAME(S): **MACK**, MACK 7-20, MACK 1 FRACTION,
NW, NW 1-26

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E14W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 55 12 N
LONGITUDE: 127 24 31 W
ELEVATION: 1340 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 1 KM

NORTHING: 6420913
EASTING: 594270

COMMENTS: The approximate centre of the former Mack claims (Assessment Report 3835, Drawing 94E14-B19). The Mack showing is located on Lunar Creek, roughly 24 kilometres north of the confluence of Lunar Creek with Geese Creek, north of the Stikine River. Dease Lake is 135 kilometres to the northwest.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Hornblende Quartz Monzonite
Biotite Quartz Monzonite
Meta Sediment/Sedimentary
Gneiss
Skarn

HOSTROCK COMMENTS: The Middle Triassic Lunar Creek Complex lies immediately to the west.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Cassiar Mountains

Contact RELATIONSHIP: GRADE: Greenschist

CAPSULE GEOLOGY

The Mack showing is located on Lunar Creek roughly 24 kilometres north of the confluence of Lunar Creek with Geese Creek, north of the Stikine River. Dease Lake is 135 kilometres to the northwest.

Regionally, the Mack showing lies on the western edge of the Omineca Belt near the Kutcho fault, marking the boundary with rocks of the Intermontane Belt. The showing is along the margin of an unnamed Late Triassic to Early Jurassic granitoid pluton. At this showing the composition of this pluton is hornblende monzonite and biotite quartz monzonite. To the west lies the Middle Triassic Lunar Creek Complex.

The copper showing is underlain by hornblende quartz monzonite. To the south of the Mack showing, the area is underlain by biotite quartz monzonite. Local skarn horizons occur throughout. Some are interbedded with metasediments and gneiss.

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EMPR MAP 65 (1989)
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GSC BULL 12; 270; 376
GSC OF 306; *483
GSC P 71-1A, pp. 23-26; 72-1A, pp. 26-29; pp. 29-32; 74-1A, pp. 13-16; 76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246; 80-1A, p. 348; 80-1B, pp. 207-211; 83-1A, pp. 221-227; 84-1A, pp. 105-108

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 736
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BIBLIOGRAPHY

GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/19

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 061**

NATIONAL MINERAL INVENTORY:

NAME(S): **EARL**, EARL 1-8, EARL 1-3 FRACTION,
WEST, WEST 13-14

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E14W
BC MAP:

LATITUDE: 57 55 26 N
LONGITUDE: 127 24 29 W
ELEVATION: 1340 Metres

LOCATION ACCURACY: Within 1 KM

COMMENTS: The location of chalcopyrite and malachite staining in hornblende quartz monzonite (Assessment Report 3835, Drawing 94E14-B19). The Earl showing is located on Lunar Creek, roughly 24 kilometres north of the confluence of Lunar Creek with Geese Creek, north of the Stikine River. Dease Lake is 135 kilometres to the northwest.

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

NORTHING: 6421347
EASTING: 594293

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

Triassic-Jurassic

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Hornblende Quartz Monzonite
Biotite Quartz Monzonite
Meta Sediment/Sedimentary
Gneiss
Skarn

HOSTROCK COMMENTS: The Middle Triassic Lunar Creek Complex lies immediately to the west.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel
METAMORPHIC TYPE: Regional

Contact

RELATIONSHIP:

PHYSIOGRAPHIC AREA: Cassiar Mountains

GRADE: Greenschist

CAPSULE GEOLOGY

The Earl showing is located on Lunar Creek roughly 24 kilometres north of the confluence of Lunar Creek with Geese Creek, north of the Stikine River. Dease Lake is 135 kilometres to the northwest.

Regionally, the Earl showing lies on the western edge of the Omineca Belt near the Kutcho fault, marking the boundary with rocks of the Intermontane Belt. The showing is along the margin of an unnamed Late Triassic to Early Jurassic granitoid pluton. At this showing the composition of this pluton is hornblende monzonite and biotite quartz monzonite. To the west lies the Middle Triassic Lunar Creek Complex.

The Earl showing is underlain by biotite quartz monzonite. To the north of the showing, the area is underlain by hornblende quartz monzonite. Local skarn horizons occur throughout. Some are interbedded with metasediments and gneiss.

Mineralization consists of sparsely disseminated chalcopyrite with associated malachite staining on fracture surfaces (Assessment Report 3835, Drawing 94E14-B19).

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EMPR MAP 65 (1989)
EMPR GEOLOGY 1977-1981, pp. 156-161
GSC BULL 12; 270; 376
GSC OF 306; *483

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

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p. 348; 80-1B, pp. 207-211; 83-1A, pp. 221-227; 84-1A, pp.
105-108
GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/19

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 062**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOAT, COPPER KING**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 37 09 N
LONGITUDE: 127 21 49 W
ELEVATION: 1880 Metres

NORTHING: 6387491
EASTING: 597745

LOCATION ACCURACY: Within 500M

COMMENTS: Centred on mineralization as reported (Assessment Report 12871, Figure 6). The Goat showing is located approximately 6.5 kilometres north of Claw Mountain.

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcocite
ASSOCIATED: Hematite Malachite
ALTERATION: Chlorite Hematite Malachite
ALTERATION TYPE: Chloritic Hematite Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Feldspar Porphyry Andesite
Porphyritic Andesite Flow
Tuff
Agglomerate
Andesite Dike
Syenite Dike
Syenite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
YEAR: 1984
CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 56.4000 Grams per tonne
Copper 3.5200 Per cent
COMMENTS: Chip sample (#19) of about 1.0 metres, from a trench.
REFERENCE: Assessment Report 12871.

CAPSULE GEOLOGY

The Goat showing is located approximately 6.5 kilometres north of Claw Mountain. Mineralization at the Goat showing was first documented in 1983.

The Goat showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by

CAPSULE GEOLOGY

or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Goat showing is underlain by Takla Group porphyritic andesite flows with minor tuffs and agglomerates. This sequence is intruded in places by andesite dikes and rare small syenite plugs and dikes of the Early Jurassic Black Lake stock.

Chalcocite and associated malachite is hosted within fractured feldspar porphyry andesite. The andesite is chlorite and hematite altered. Fractures are filled with hematite and minor chalcocite and malachite. Mineralization is exposed for the entire length of a 30-metre trench. A 1-metre chip sample from this trench (Sample #19, Assessment Report 12871) assayed 3.52 per cent copper and 56.4 grams per tonne silver.

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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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DATE CODED: 1985/07/24
DATE REVISED: 1992/12/08

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 063**

NATIONAL MINERAL INVENTORY:

NAME(S): **JK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 18 14 N
LONGITUDE: 126 43 16 W
ELEVATION: 1810 Metres

NORTHING: 6353512
EASTING: 637292

LOCATION ACCURACY: Within 1 KM

COMMENTS: The approximate location of the centre of the JK claims (T. Kalnins, personal communication). The showing is located 7.75 kilometres south-southwest of Bend Mountain, south of the Toodoggone River, and 5.5 kilometres northwest of the Finlay River. Smithers is 290 kilometres to the south.

COMMODITIES: Copper Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena
ALTERATION: Epidote Chlorite Hematite Pyrite
ALTERATION TYPE: Propylitic Hematite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	Black Lake Suite
Lower Jurassic			

LITHOLOGY: Feldspar Augite Porphyry Andesite
Syenite
Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: GRADE: Greenschist
Zeolite

CAPSULE GEOLOGY

The approximate centre of the JK claims is located 7.75 kilometres south-southwest of Bend Mountain, south of the Toodoggone River, and 5.5 kilometres northwest of the Finlay River (T. Kalnins, personal communication). Smithers is 290 kilometres to the south.

The JK showing is underlain by Upper Triassic feldspar and augite porphyry andesite of the Takla Group (Assessment Report 3265). On a regional scale in the Toodoggone area, Takla Group rocks are described as coarse grained augite phyric basalt and andesite lava flows; lesser amygdaloidal and coarse plagioclase phyric flows; local pillow lavas and hyaloclastite; interflow tuffaceous siltstone, mudstone and limestone (Bulletin 86). These rocks have been cut by syenite to monzonite stocks of the Early Jurassic Black Lake Suite. These units have been altered by the introduction of pyrite, epidote, chlorite, and locally intense fracturing.

Minor occurrences of chalcopyrite, sphalerite, galena and hematite have been found in the volcanic rocks (Assessment Report 3265). Geochemical samples were analysed for copper, zinc, molybdenum and manganese (Assessment Report 3265). An electromagnetic conductor is coincident with a very extensive copper geochemical anomaly on the flank of a sharply positive magnetic feature.

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194

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DATE CODED: 1985/07/24
DATE REVISED: 1992/12/01

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 064**

NATIONAL MINERAL INVENTORY: 094E11 Pb1

NAME(S): **METSANTAN**, METSANTAN 1-9, METS,
METS 1-2

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 25 14 N
LONGITUDE: 127 18 18 W
ELEVATION: 1965 Metres

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6365471
EASTING: 601797

LOCATION ACCURACY: Within 500M
COMMENTS: The location of Trench L-82-15 on the Ridge zone, 5.2 kilometres east from Metsantan Lake and 2.5 kilometres southeast of the Mets occurrence (094E 093) (Assessment Report 14412). Smithers is located 300 kilometres to the south.

COMMODITIES: Gold Silver Lead Copper

MINERALS

SIGNIFICANT: Galena Chalcopyrite Pyrite
COMMENTS: Mineralogy reported from Bulletin 86. Up to 2 per cent galena is reported and chalcopyrite is minor.

ASSOCIATED: Quartz Barite
ALTERATION: Silica Hematite Clay
COMMENTS: The prospect is classified as an adularia-sericite type epithermal occurrence (Bulletin 86). Up to 10 per cent manganese oxide at the North Silver zone.

ALTERATION TYPE: Silicific'n Argillic
MINERALIZATION AGE: Middle Jurassic
ISOTOPIC AGE: 168 +/- 6 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 600 x 18 Metres STRIKE/DIP: 150/45 TREND/PLUNGE:
COMMENTS: The Ridge zone has been traced for a strike length of 600 metres and is up to 18 metres wide. Quartz stringers strike 150 degrees and dip 52 or 38 degrees (Assessment Report 14412 and Fieldwork 1986).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Trachyte Flow
Trachyte Tuff
Trachyte
Trachyandesite Flow
Trachyandesite Tuff
Trachyandesite Porphyry
Trachyandesite
Quartz Andesite
Ferruginous Siltstone
Volcanic Sandstone

HOSTROCK COMMENTS: The date given is the oldest age of the Metsantan Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
COMMODITY: Gold

YEAR: 1985

GRADE: 12.1000 Grams per tonne

COMMENTS: Re-sampling from Trench L-82-15 of the Ridge zone in 1985. Initial results from this interval were 11.18 grams per tonne gold.

REFERENCE: Assessment Report 14412.

CAPSULE GEOLOGY

The Metsantan prospect consists of three zones defined by a series of subparallel quartz-barite veins and breccias. The occurrence is located 5.2 kilometres east from Metsantan Lake and 2.5 kilometres southeast of the Mets occurrence (094E 093) (Assessment Report 14412). Smithers is located 300 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The Metsantan prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Metsantan prospect is underlain by northwest trending volcanic units of the Metsantan Member, and crosscut by major and minor fault systems. The main northwest fault is possibly correlative with the Cliff Creek structure at the Lawyers mine (094E 066), 14 kilometres to the southeast. A ring and radial fracture system converges on nearby Metsantan Mountain peak. The oldest unit of the Metsantan Member is composed of trachyte and trachyandesite flows and tuff. Within this unit is a distinctive quartz-eye andesite characterized by a pink aphanitic groundmass and clear quartz phenocrysts. Minor ferruginous siltstone and volcanic sandstone also occur within this unit (Assessment Report 14498).

The Ridge zone, overall, has been traced over a strike length of 600 metres and 18 metres width. In August 1985, five trenches in the Ridge zone were cleaned and re-sampled by Lacana. Quartz and/or barite were observed in four of the trenches with the strongest development in Trench L-82-16. Four irregular quartz-barite zones were exposed in an area between two converging faults, which mark the outer boundary of a zone of intense fracturing, siliceous alteration and quartz-barite vein development. The hostrock is trachyte. Quartz-barite zones consist mainly of barite-rich mud containing numerous angular quartz fragments. A quartz-barite vein was locally found at depth. Contacts with intensely altered wallrock are sharp or transitional. Better gold values are restricted to barite-rich zones (Assessment Report 14412). Trench L-82-15 exposed a narrow zone of quartz stringers, representing the most northerly, traceable vein development of this zone. Quartz stringers are 2 centimetres wide and silicified fractures occupy a 0.5-metre zone cutting highly sheared trachyte and trachyandesite hostrock at 150 degrees and dipping 52 degrees (hangingwall) and 38 degrees (footwall). A quartz-barite zone 30 metres to the east, in trenches L-82-11 and L-82-14, may be a fault displacement of the main Ridge zone. Two of three trenches dug by Golden Rule Resources also exposed mineralized material. Trench 11 cut through siliceous and pyritic trachyandesite porphyry. Weak mineralization is found in leached, argillically altered trachyandesite and in hematitic, vuggy, pyritic trachyandesite porphyry. Trench 13 exposed similar materials including minor barite breccia.

The best precious metal assay values from the Ridge zone come from Trench L-82-15. Gold values range up to 11.18 grams per tonne and 12.1 grams per tonne, both over 2.0 metres (Assessment Report 14412).

The Central Silver zone consists of two narrow, subparallel quartz breccia veins composed of quartz fragments with up to 2 per

CAPSULE GEOLOGY

cent galena and pyrite, and minor chalcopyrite, hosted in purple to grey trachyandesite, locally trachyte. The veins are moderately silicified throughout the central part and enclosed by a strong argillic alteration (clay) envelope (Assessment Report 14412). The zone is approximately 75 metres long and individual veins two metres wide.

In contrast to the Ridge zone, the Central Silver zone is high in silver. The best interval, exposed by trenches L-82-17 and B85-12, of precious metal enrichment averages 0.62 gram per tonne gold and 80.58 grams per tonne silver over 3.0 metres (Assessment Report 14412).

In 1985, trenches T-85-5 to T-85-11 were excavated by Lacana to evaluate quartz-barite veins, thought to be the possible north extension of the Central Silver zone. Trenches intersected up to three subparallel, narrow (up to 2 metres) quartz-barite veins. The zone is roughly 250 metres long and is known as the North Silver zone. Golden Rule Resources also reported a trench on the North Silver zone. Trench 10 intersected propylitically altered trachyandesite porphyry and a well silicified and brecciated fault zone. The fault zone consisted of vuggy, brecciated and silicified trachyandesite porphyry, with up to 10 per cent manganese oxide as fracture filling and coating, over 1 to 2 metres. The fault strikes 314 degrees and dips 80 degrees northeast.

The North Silver zone, as for the Central Silver zone, is also enriched in silver rather than gold. Elevated silver was noted in quartz-barite veins and for up to 4.5 metres in altered wallrock. Samples from Trench T-85-8 yielded some of the better gold and silver including 3.39 grams per tonne gold and 20.91 grams per tonne silver over 2.0 metres (Assessment Report 14412). Assay samples from Trench 10 yielded a high of 27.0 grams per tonne silver (Assessment Report 14498).

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N MINER March 4, 1982; Sept.15; Oct.13, 1986
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/07/24
DATE REVISED: 1992/11/06

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 065**

NATIONAL MINERAL INVENTORY: 094E6 Pb2

NAME(S): **JD-M2**, GUMBO, JC,
JD WEST, GAS 1-2, JM,
JD, JU FRACTION, JK FRACTION,
MOOSE 3, HORN 2 FRACTION, WAS 1-32,
PIT 69-76, MAC GROUP, LAIR GROUP,
M2

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6367416
EASTING: 611125

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 26 09 N
LONGITUDE: 127 08 56 W
ELEVATION: 1850 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: The location of drillholes J84-01, 04 and 05 on the Gumbo zone of the JD-M2 prospect. The prospect is located 4.5 kilometres north-northeast of Kadah Lake and 4.5 kilometres south of Oxide Peak in the southern Toodoggone gold camp, approximately 280 kilometres north of Smithers. The JD-M1 (094E 168) prospect is 300 metres to the northwest.

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena Acanthite
COMMENTS: Sphalerite is minor.
ASSOCIATED: Quartz Carbonate Pyrite
ALTERATION: Silica Epidote Chlorite Hematite Clay
Talc Calcite
ALTERATION TYPE: Propylitic Silicific'n Argillic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Disseminated
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 800 x 50 x 5 Metres STRIKE/DIP: 300/25E TREND/PLUNGE:
COMMENTS: The Gumbo zone is 800 metres long by 5 metres wide by approximately 50 metres thick. The zone strikes 300 degrees and dips 25 degrees to the northeast (Assessment Report 18015).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toodoggone

LITHOLOGY: Andesite Flow Breccia
Andesitic Flow
Andesite
Latite Flow
Lapilli Block Tuff
Latite
Lahar
Diabase Dike
Sub Intrusive
Volcanic Sandstone

HOSTROCK COMMENTS: The Toodoggone Formation volcanics are assigned to the McClair Member (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Gold	44.8200	Grams per tonne

COMMENTS: Intersection is from drillhole J84-01 over a 4.72-metre interval on the Gumbo zone. Refer to capsule geology for results of other zones.
REFERENCE: Assessment Report 18015.

CAPSULE GEOLOGY

The JD-M2 prospect is located approximately 4.5 kilometres north-northeast of Kadah Lake and 4.5 kilometres south of Oxide Peak, some 280 kilometres north of Smithers. The prospect consists of several zones; the Gumbo, JC and JD West. It lies within the Omineca-Cassiar mountains at the southern end of the Toadoggone gold camp. The JD-M2 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The JD-M2 prospect is underlain by a thick succession of Lower Jurassic volcanics of the Toadoggone Formation. The sequence has been subdivided into two members which are separated by a low-angle thrust (?) fault. The upper McClair Member consists of heterogeneous, lapilli to block tuff, andesitic flows and numerous cogenetic dikes and subvolcanic plugs; minor mudstone and conglomerate (Bulletin 86). The underlying Metsantan Member consists of latite flows with lenses of lapilli tuff and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). Both members are dominated by flows and flow breccias around the JD-M2 prospect (Assessment report 18015). This sequence is cut by a series of steeply dipping diabasic and rhyolitic dikes.

Alteration on the JD-M2 is structurally controlled and ranges from weak propylitic to intense silicic, argillic and phyllic. Propylitic alteration is the most widespread and important alteration type of the prospect, either hosting mineralized veins or forming haloes around more intensely altered and mineralized systems. Propylitic alteration consists of replacement of plagioclase phenocrysts by epidote or hematite and mafic phenocrysts by chlorite, epidote, actinolite, talc and disseminated calcite (Assessment Report 18015).

The Gumbo and JC zones are marked by extensive silicification and clay alteration along a low-angle thrust (?) fault that juxtaposes the McClair Member against the Metsantan Member, both of the Toadoggone Formation. The apparent vertical offset on this fault is 1215 metres (Assessment Report 18015). The JC zone, directly south of the Gumbo zone, is thought to be the southern displaced extension of the Gumbo zone, due to a steeply dipping, east-striking crossfault.

In all, the alteration zone hosting the Gumbo zone has a strike length of 800 metres and a maximum width of 5 metres. On surface, the Gumbo zone is composed mainly of yellow and beige clay (fault gouge) with angular to rounded fragments of argillic altered and silicified andesite. Post-alteration and mineralization motion along this fault is evidenced by re-brecciation of silicified layers. Moderate to well developed propylitic alteration envelopes the fault zone. Silicification persists for several metres below the fault in the footwall. Propylitic alteration decreases with depth and is gradually replaced with hematite alteration of groundmass and phenocrysts.

Mineralization at the Gumbo and JC zones is concentrated in silicified and brecciated andesites. Chalcopyrite and minor galena, sphalerite and pyrite comprise mineralization contained in narrow quartz +/- carbonate veinlets in both the hangingwall and footwall rocks of the low-angle thrust (?) fault.

CAPSULE GEOLOGY

The Gumbo zone contains variable medium to high-grade gold and silver mineralization over 0.5 to 5.0 metres width and at least 400 metres length (Assessment Report 18015). Important gold values are concentrated in silicified portions of the footwall. The best results were obtained during a drill program conducted by Kidd Creek Mines Ltd. in 1984. Assay results over 4.72 metres were 44.82 grams per tonne gold and included a 2.25 metre section of 99.1 grams per tonne gold (J84-01) (Assessment Report 18015).

The best assays from the JC zone were 1.60 grams per tonne gold and 8.5 grams per tonne silver from a 1.5-metre channel sample (Assessment Report 18015).

Mineralization at the JD West zone is characterized by quartz-carbonate breccias and veins, and clay gouge associated with a low-angle thrust (?) fault. Most of the zone contains low to medium-grade gold and silver mineralization over widths of 0.5 to 4.0 metres and a strike length of a least 600 metres (Assessment Report 18015). One of the better intersections from this zone analysed 1.16 grams per tonne gold and 40.6 grams per tonne silver over 3.0 metres

AGC Americas Gold Corporation and Antares Mining and Exploration Corp. drilled one drill hole on the JC zone in 1997. AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

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DATE CODED: 1985/07/24
DATE REVISED: 1992/09/15

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 066**

NATIONAL MINERAL INVENTORY: 094E6 Au3

NAME(S): **LAWYERS**, LAWYERS MINE, CHENI MINE,
AGB, DUKE RIDGE, CLIFF CREEK,
PHOENIX

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 20 18 N
LONGITUDE: 127 10 49 W
ELEVATION: 1820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: AGB zone, 4 kilometres south of the Toadoggone River and 1.5 kilometres west of a major south-flowing tributary to the Toadoggone River, 280 kilometres north from Smithers (Property File - Prospectus, Cheni Gold Mines Inc.).

Underground
MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6356513
EASTING: 609531

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS

SIGNIFICANT: Gold Silver Electrum Acanthite Pyrite
Chalcopyrite Sphalerite Galena Argentite
COMMENTS: Minor chalcopyrite, sphalerite and galena.
ASSOCIATED: Chalcedony Quartz Amethyst Calcite Barite
ALTERATION: Limonite Clay Hematite Goethite Lepidocrocite
Clay Silica Limonite Epidote
Hematite Chlorite
COMMENTS: Also calcite.
ALTERATION TYPE: Argillic Silicific'n Propylitic
MINERALIZATION AGE: Middle Jurassic
ISOTOPIC AGE: 180 +/- 6 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Stockwork Vein Breccia
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Cylindrical
MODIFIER: Fractured Faulted
DIMENSION: 548 x 12 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: AGB deposit; date from Fieldwork 1985, page 167.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toadoggone

LITHOLOGY: Quartz Andesite Crystal Tuff
Quartz Andesite
Trachyandesite
Aphanitic Tuff
Welded Trachyte Tuff
Trachyte Crystal Tuff
Trachyte Lapilli Crystal Tuff
Trachyte
Ash Flow
Fine Grained Tuff

HOSTROCK COMMENTS: Metsantan and Adogacho members of the Toadoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Lower Jurassic Toadoggone Formation (Hazelton Group) volcanic rocks form a northwest-trending belt at least 90 kilometres long and 35 kilometres wide preserved between the undivided Lower Jurassic Hazelton Group to the east and the Upper Cretaceous-Eocene (?) Sustut Group to the west. Where observed, they rest structurally on the Upper Triassic Takla (Stuhini) Group. Toadoggone pyroclastic and epiclastic volcanic rocks are a predominantly calcalkaline andesitic to dacitic subaerial succession. The region as a whole resembles a synclinorium in section from northwest to southeast. Potassium-argon studies of hornblende and biotite indicate the age of Toadoggone volcanism ranges from 204 to 182 Ma. This age appears to be divisible into two main groups: an older, lower stage of volcanism

CAPSULE GEOLOGY

dominated by andesitic pyroclastics and flows characterized by widespread propylitic and zeolitic alteration; and a younger, upper stage of volcanism dominated by andesitic ash-flow tuffs which generally lack significant epithermal alteration. All the known epithermal gold-silver deposits and occurrences are restricted to the lower Toodoggone volcanics and underlying units (Fieldwork 1988).

Toodoggone volcanic rocks display broad open folds or homoclines with attitudes generally less than 25 degrees dipping predominantly to the west. The overlying Sustut Group sedimentary rocks are structurally unaffected and are horizontal. A northwest trending set of younger, steeply dipping faults and synvolcanic half-graben margins are the dominant structure in the region. Major structural breaks are postulated to have been caused, or be the result of, a northwest trending line of volcanic centres. Small stocks are also aligned northwest, suggesting they were also influenced by the same structural trend. Subsequent to volcanism and intrusion, young faults are recognizable as northwest-trending lineaments. Major north-northwest fault systems are from west to east: Attorney, Moosehorn-McClair and Saunders-Jock. Most prominent gossans are aligned along this configuration of faults. The Attorney fault system passes through the Lawyers property.

Two distinct mappable sequences of the Toodoggone volcanics, consisting of an older pyroclastic quartz andesite crystal tuff sequence (Adoogacho Member) and a younger trachyandesite sequence (Metsantant Member), are evident at the Lawyers mine property. The two sequences are intruded by mafic andesite dikes, and are overlain by pyroxene basalt. The volcanic sequence in stratigraphic order comprises: a) quartz andesite crystal tuff, b) fine grained to aphanitic chocolate brown tuff, c) welded trachyte tuff, and d) trachyte crystal and crystal lapilli tuff with interbedded volcanogenic greywacke. Structural relationships between the quartz andesite and the trachyandesite sequence suggest that the trachyandesite volcanism occurred along the faulted margins of a graben. Chalcedony and quartz breccias and stockwork veins with gold-silver mineralization occur along these graben margins.

The youngest rocks on the Lawyers property occur in the area of the Duke Ridge and Cliff Creek zones, and are volcanic flows. They consist of a megacrystic potassium feldspar ash-fall flow member and medium-grained andesite crystal and crystal lapilli tuffs with interbedded greywackes. At the Duke Ridge zone, a thin aphanitic brown tuff member is interbedded within the andesite crystal tuff.

Epithermal gold-silver mineralization at the Lawyers mine occurs in quartz vein stockwork bodies and chalcedony breccia zones which appear to be controlled by fracture systems related to graben margins. Three deposits have been discovered to date and are known as the AGB zone (Amethyst Gold Breccia zone), the Cliff Creek zone, and the Duke Ridge zone. The Cliff Creek zone, a parallel zone which lies approximately 1931 metres to the west of the AGB zone, extends for a strike length of at least 1609 metres. The Duke Ridge zone extends for at least 1219 metres, and is a cross structure between the Cliff Creek and AGB zones.

The volcanic pile of the AGB zone is cut by several north-northwest and west-striking faults related to the Attorney fault system. The major fault is the "D1" which strikes north-northwest and dips about 60 degrees to the west. The fault appears to be left-lateral with a major normal component. The Gopherite fault has a north strike, dips vertical, and is a splay of the D1. Several minor east-striking faults, subsidiary to the D1 fault, also occur in the area.

The AGB zone strikes north and extends for at least 548 metres with widths of up to 12 metres. Mineralization consists predominantly of native gold, native silver, electrum and acanthite with minor chalcopryrite, sphalerite and galena, in a gangue of chalcedony and quartz, and minor calcite. It occurs as fracture fillings in stockwork veins as well as in the matrix within breccia zones and is controlled by a north and north-northeast trending fracture system which dips steeply to the west. Potassium-argon dating of adularia from vein selvages yielded a mineralization age date of 180 +/- 6 Ma (Middle Jurassic) (Fieldwork 1985). Geometrically, the resulting veins and breccia zones crosscut the stratigraphy, emerge from the older footwall quartz andesites and pass through the younger overlying trachyandesite sequence. At lower levels within the quartz andesite, the AGB zone appears as a single distinct vein system, whereas in the upper levels, the system splays into two prominent zones. In cross-section, the whole system resembles a "Y" configuration.

Patterns of breccia observed in hand specimen and on a mine-wide scale indicate that the intensity of veining and associated fractures increases toward a breccia zone. In general, brecciation is more

CAPSULE GEOLOGY

intense in quartz andesite, but the zones are narrow, with narrow alteration envelopes. The alteration envelopes consist of various clay minerals with limonite, goethite and hematite, and vary from 1 to 50 centimetres in width. Argillic alteration is more widespread in the overlying trachyandesite sequence than in the quartz andesite, and silicification is restricted to wallrock fragments within the chalcedony breccia zones and stockwork veins. In the aphanitic to fine-grained tuffs, the breccia zones are restricted to narrow hairline fractures whereas in the overlying welded tuffs and trachyte crystal tuffs, the breccia zones are thick and widespread and alteration (mainly argillic) is intense.

Within the breccia zones are at least four periods of chalcedony and quartz deposition. The colour of chalcedony varies from white to cream, green, grey to dark grey, red and opaque brown. Quartz, amethyst, and to a minor extent calcite, are present in the centres of veins and breccia zones, representing the last stages of open-space filling. Chalcedony breccias and stockwork veins are often rebrecciated in areas cut and offset by postmineral faults, such as the D1 fault. The matrix in the rebrecciated chalcedony breccias is predominantly limonite, various clay minerals, and to minor extent hematite.

Chalcedony breccia zones and veins in quartz andesite are bordered by bleaching and silicification of wallrock with quartz and chalcedony veinlets and hematite. Intensity of chalcedony veining and microbreccias increases with more extensive bleaching, silicification and argillization. Chalcedony matrix within breccia zones and veinlets is impregnated with hematite and various other iron oxide minerals, including minor jasper. A propylitic zone, consisting of chlorite, minor epidote and calcite veinlets, is peripheral to the zone of bleaching and silicification. Sericite is present only in minor amounts within the breccia zones and as narrow selvages.

Drillhole data and underground mapping suggest that the argillic zone is more developed at the higher levels and within the trachyte crystal and welded tuffs, with correspondingly smaller peripheral propylitic zones.

At the Duke Ridge and Cliff Creek zones, chalcedony breccia zones are similar to those in the AGB zone. However, the breccia zones are generally better defined with sharper vein boundaries and at least four periods of chalcedony and quartz deposition are present. Near the surface and near postmineral faults, the breccia zones are broken up, with wallrock fragments completely altered to clay. On Duke Ridge, the breccia zones appear to be refracted along the contact between andesite crystal tuffs and a fine grained tuff member. Breccia zones, as in the case of the AGB zone, do not form strong and well-defined zones in the fine-grained tuffs.

In the Cliff Creek and Duke Ridge zones, chalcedony breccia zones and stockwork veins are associated with pervasive argillic alteration. The alteration consists of various clay minerals with or without limonite, goethite, hematite, and manganese oxides and varies in thickness from about 5 to 50 metres. Propylitic alteration with chlorite, epidote, and to a minor extent calcite, is present peripheral to the argillic zone. Superimposed on these is a supergene alteration zone of various clays and limonite up to 30 metres deep. Gold and silver values are generally low within supergene altered areas.

The Cliff Creek zone contains indicated (probable) reserves of 422,591 tonnes grading 6.37 grams per tonne gold and 264.29 grams per tonne silver based on a cutoff grade of 3.42 grams per tonne gold. Inferred (possible) reserves are 103,205 tonnes grading 5.75 grams per tonne gold and 267.72 grams per tonne silver based on a cutoff grade of 3.42 grams per tonne gold (George Cross New Letter No. 171 (September 5), 1990). Indicated reserves at the Duke Ridge zone are 68,032 tonnes grading 7.3 grams per tonne gold (George Cross News Letter No. 95 (May 16), 1990).

A new vein zone was discovered within the area of intersection between the Cliff Creek and Duke Ridge structures. Trenching exposed a 200 metre strike length of strong veining with sampling yielding 4.79 grams per tonne gold and 145.34 grams per tonne silver across 1 metre (George Cross News Letter No. 171 (September 5), 1990).

Examination of polished and polished thin sections of chalcedony-quartz breccia samples from both the AGB and Duke Ridge zones reveal hypogene and supergene types of mineralization. In both types, the various ore minerals occur in microfractures, vugs, and grain and crystal boundaries of non-sulphide and non-metal vein constituents. The hypogene type is characterized by acanthite, native gold, electrum with minor sphalerite, galena, and chalcopyrite, with up to 5 per cent pyrite. In places, acanthite projects inward from the walls of vugs with calcite in the

CAPSULE GEOLOGY

interstices. The main gangue vein minerals are banded chalcedony and quartz, and minor barite. Calcite and barite occur in centres of veins and as matrix in breccia.

The supergene type is made up of acanthite, native gold, and electrum with hematite, lepidocrocite, and goethite disseminated through the gangue constituents, and pseudomorphic after pyrite. Acanthite occurs in limonitic cavities or boxworks from which sphalerite, chalcopyrite and galena were probably leached out by acidic solution derived from the breakdown of pyrite.

At the AGB zone, silver to gold ratios show that silver values generally increase toward the north and at depth. The distribution of silver to gold ratios also indicates that the margins of the zone are richer in gold relative to silver.

The Lawyers mine operated in a pre-production phase during 1988; the mill was commissioned in December 1988. Commercial production began in March 1989, and all pre-production and production statistics for the operation were recorded in 1989.

The mine began production from the AGB zone where measured recoverable reserves as of December 31, 1989 were 384,338 tonnes grading 8.63 grams per tonne gold (George Cross News Letter No. 95 (May 16), 1990). This zone has been mined out and broken material processed.

Cheni Gold Mines Inc. has completed mining and milling the new and recently discovered Phoenix zone deposit during the fourth quarter of 1992. In total, 4852 tonnes were mined and milled at a calculated head grade of 46.2 grams per tonne gold and 2155.8 grams per tonne silver. The mill was modified to produce dore bars and a flotation concentrate. The cumulative recovery for gold and silver averaged 91.7 per cent and 89 per cent respectively. On December 16, 1992, the Lawyers mine was put on a care and maintenance basis for the winter months (George Cross News Letter No. 240 (December 14), 1992; George Cross News Letter No. 42 (March 2), 1993).

The Lawyers underground mine originally went into production in 1989 but the company downgraded reserves in 1990, significantly shortening the mine's life.

Production in 1991 includes ore from the A1 deposit (094E 091, 099, 079).

In 1996, AGC Americas Gold Corp. acquired the Lawyers property. In 1997, AGC entered into a joint venture agreement with Antares Mining and Exploration Corporation. AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

Cheni Resources Inc. completed reclamation of the Lawyers mine in September 1998.

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DATE CODED: 1985/07/24
DATE REVISED: 1993/04/08

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094E 067**

NATIONAL MINERAL INVENTORY:

NAME(S): **LAKE 21**, LAKE, LAKE 1-4,
RON, RON 1-2, THUTADE,
THUTADE 1-44, SHOWING 5, SOUTH TOODOGGONE CAIRN,
CAIRN

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 03 52 N
LONGITUDE: 126 50 21 W
ELEVATION: 1725 Metres

NORTHING: 6326637
EASTING: 631027

LOCATION ACCURACY: Within 500M

COMMENTS: Location of a vein hosted in skarn near a marble-andesite contact, approximately 8.5 kilometres west-northwest of the Kemess South occurrence (094E 094), about 260 kilometres north of Smithers (Assessment Report 18241).

COMMODITIES: Copper Lead Zinc Silver

MINERALS

SIGNIFICANT: Chalcopyrite Galena Pyrite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
SHAPE: Tabular
DIMENSION: 15 Metres STRIKE/DIP: 325/75E TREND/PLUNGE:
COMMENTS: A steeply-dipping vein strikes northeasterly and can be traced for 15 metres (Assessment Report 18241).

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Marble
Plagioclase Augite Porphyritic Andesite
Porphyritic Monzonite
Quartz Monzonite
Granodiorite
Skarn
Argillite
Chert
Quartzite
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist
Zeolite
COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 89.9000 Grams per tonne
Copper 4.8600 Per cent
Zinc 1.0400 Per cent
COMMENTS: One of two 1-metre chip samples taken from the vein. Lead and gold values were minor.
REFERENCE: Assessment Report 18241.

CAPSULE GEOLOGY

The Lake 21 showing is located approximately 8.5 kilometres west-northwest of the Kemess South occurrence (094E 094), 260 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Lake 21 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Thutade Lake area is largely underlain by andesite volcanics and related sediments of the Takla Group and small pockets of Asitka Group sediments. The major structures in the area are north-northwest striking faults, such as the Moose Valley fault and the Ingenika fault. Extensive exploration, including diamond drilling, was conducted on the ground around the Lake 21 showing between 1970 to 1984. Some nine mineral showings were found. The area hosts fault and/or skarn-controlled copper, lead, zinc and silver occurrences throughout.

The Lake 21 showing is underlain by fine grained to coarse plagioclase and augite porphyritic, grey to greenish grey to maroon andesite, argillite, chert, quartzite, breccia and conglomerate of the Takla Group and the Early Jurassic Kemess pluton, a large intrusive body composed of porphyritic monzonite, quartz monzonite, and granodiorite. Several bodies of marble have been mapped along the northeast corner of Thutade Lake belonging to the Asitka Group.

The Lake 21 showing consists of chalcopyrite, pyrite and galena within a vein hosted in skarn near a marble-andesite contact. The steeply dipping vein strikes northwesterly and can be traced for 15 metres. VLF electromagnetic results confirm a small conductor covering the area of the Lake 21 showing.

Sampling in 1984 over a 1.5-metre width assayed 6.8 per cent copper, 88.2 grams per tonne silver with minor lead and zinc (Assessment Report 18241). One of two 1-metre chip samples taken from the vein in 1988 assayed 4.86 per cent copper, 89.9 grams per tonne silver, 1.04 per cent zinc with minor lead and gold (Assessment Report 18241).

Auterra Ventures Inc. sampled the property in 1998.

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- GSC OF 306; 483
- GSC P 80-1A, pp. 27-32
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- N MINER MAG March 1988, p. 1
- W MINER April, 1982; October 13, 1986

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 756
REPORT: RGEN0100

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WWW <http://www.infomine.com/index/properties/CAIRN.html>

DATE CODED: 1992/01/07
DATE REVISED: 1992/01/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 068**

NATIONAL MINERAL INVENTORY:

NAME(S): **KODAH**, KODAH 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 22 21 N
LONGITUDE: 127 16 14 W
ELEVATION: 1335 Metres

NORTHING: 6360174
EASTING: 604002

LOCATION ACCURACY: Within 500M

COMMENTS: The centre of Trench 90-3, exposing pyritic, grey quartz fragments and minor chloritic crystal tuff in a fault gouge, over 20 metres, located approximately 6.6 kilometres northwest of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 20629).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma

DATING METHOD: Argon/Argon

MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
COMMENTS: A date from the Cliff Creek zone of the Lawyers mine (094E 066) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 200 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite Crystal Tuff
Andesite
Volcaniclastic Breccia
Quartz Trachyandesite
Latite Lava Flow
Lahar
Epiclastic
Pyroclastic

HOSTROCK COMMENTS: Volcanic rocks are assigned to the Metsantan Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1990
SAMPLE TYPE:	Chip		
COMMODITY	GRADE		
Silver	4.6000	Grams per tonne	
Gold	2.2200	Grams per tonne	

COMMENTS: Sample SF-K-26, a 1-metre chip sample from trench 90-3.
REFERENCE: Assessment Report 20629.

CAPSULE GEOLOGY

The Kodah showing is located approximately 6.6 kilometres northwest of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Kodah showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-

CAPSULE GEOLOGY

trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Kodah showing is underlain by andesite crystal tuffs, volcanoclastic breccias and hypabyssal quartz trachyandesites, part of a larger package of Toodoggone Formation volcanics assigned to the Metsantan Member. Other lithologies of the Metsantan Member include mostly latite lava flows with interflow lahar, and a mix of epiclastic and pyroclastic rocks (Bulletin 86).

Exploration since 1971 has outlined a northwest-trending gold and silver geochemical anomaly, coincident with a VLF electromagnetic conductor, airphoto lineament and four significant grab sample rock assays. The best grab sample analysed 29.14 grams per tonne gold and 2125.7 grams per tonne silver (Assessment Report 20629).

A trenching program, in 1990, was conducted along a fault coincident with the geochemistry anomaly. A total of 34 samples were collected from three trenches. Trench 90-3 was excavated along a fault for 75 metres but intersected only 20 metres of bedrock. The bedrock was composed mostly of grey, pyritic (2 to 3 per cent) quartz vein material with less than 1-centimetre wide vugs and chloritic crystal tuff fragments hosted in a fault gouge. The highest assay from trench samples was sample SF-K-26, a 1-metre chip, from trench 90-3. This sample assayed 2.22 grams per tonne gold and 4.6 grams per tonne silver (Assessment Report 20629).

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291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/23

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 069**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER POND (NORTH)**, SILVER POND GROUP, SILVER SUN,
SILVER POND, SILVER POND FR., ASAP,
SILVER PEAK FR., SILVER GRIZZLY FR., SILVER CLOUD 1-3,
SILVER MARTEN, SILVER CREEK, SILVER BULLET FR.

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 20 22 N
LONGITUDE: 127 14 52 W
ELEVATION: 1550 Metres

NORTHING: 6356530
EASTING: 605466

LOCATION ACCURACY: Within 500M

COMMENTS: The centre of an intensely hydrothermally altered and mineralized zone on the Silver Sun claim (Assessment Report 16952; Figure 87-5).

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena
ASSOCIATED: Silica Pyrite Epidote Chlorite Barite
ALTERATION: Silica Magnetite
Hematite Goethite Jarosite Chlorite Pyrite

ALTERATION TYPE: Silicific'n Sericitic Argillic
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma

DATING METHOD: Argon/Argon MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Stockwork Vein Breccia
CLASSIFICATION: Epithermal
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Tabular
MODIFIER: Faulted

DIMENSION: 600 x 200 x 20 Metres STRIKE/DIP: 340/ TREND/PLUNGE:
COMMENTS: An area of low-grade stockwork mineralization. Age date from the Cliff Creek zone of the Lawyers mine (094E 066) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 200 +/- 7 Ma		
	DATING METHOD: Potassium/Argon		
Cretaceous	Biotite Sustut	Tango Creek	

LITHOLOGY: Porphyritic Andesitic Flow
Andesite
Pyroclastic
Lapilli Tuff
Felsic Mafic Dike
Quartz Andesite Crystal Tuff
Aphanitic Tuff
Trachyte
Welded Trachyte Tuff
Trachyte Crystal Lapilli Tuff

HOSTROCK COMMENTS: Toodoggone volcanic rocks are assigned to the Metsantan Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1987

COMMODITY	GRADE	
Silver	2.9590	Grams per tonne
Gold	1.4400	Grams per tonne

COMMENTS: Grades are the weighted average over 1 metre true width of 25
 drillhole intersections with > 1 gram per tonne precious metals.

REFERENCE: Assessment Report 16952.

CAPSULE GEOLOGY

The Lower Jurassic Toodoggone Formation (Hazelton Group) volcanics form a northwest-trending belt at least 90 kilometres long and 35 kilometres wide preserved between the undivided Lower Jurassic Hazelton Group to the east and the Upper Cretaceous-Eocene (?) Sustut Group to the west. Where observed, they rest structurally on the Upper Triassic Takla Group. Toodoggone pyroclastic and epiclastic volcanic rocks are a predominantly calcalkaline andesitic to dacitic subaerial succession. The region as a whole resembles a synclinorium in section from northwest to southeast. Potassium-argon studies of hornblende and biotite indicate the age of Toodoggone volcanism ranges from 204 to 182 Ma. This age appears to be divisible into two main groups: an older, lower stage of volcanism dominated by andesitic pyroclastics and flows characterized by widespread propylitic and zeolitic alteration; and a younger, upper stage of volcanism dominated by andesitic ash-flow tuffs which generally lack significant epithermal alteration. All the known epithermal gold-silver deposits and occurrences are restricted to the lower Toodoggone Formation volcanics and underlying units (Fieldwork 1988).

Toodoggone volcanic rocks display broad open folds or homoclines with attitudes generally less than 25 degrees dipping predominantly to the west. The overlying Sustut Group sedimentary rocks are structurally unaffected and are horizontal. A northwest-trending set of younger, steeply dipping faults and synvolcanic half-graben margins are the dominant structure in the region. Major structural breaks are postulated to have been caused, or be the result of, a northwest-trending line of volcanic centres. Small stocks are also aligned northwest, suggesting they were also influenced by the same structural trend. Subsequent to volcanism and intrusion, young faults are recognizable as northwest-trending lineaments. Major north-northwest fault systems are from west to east: Attorney, Moosehorn-McClair and Saunders-Jock. Most prominent gossans are aligned along this configuration of faults. The Attorney fault system passes through the Lawyers property (094E 066).

Two distinct mappable sequences of the Toodoggone volcanics, consisting of an older pyroclastic quartz andesite crystal tuff sequence (Adogacho Member) and a younger trachyandesite sequence (Metsantan Member), are evident on the Silver Pond property. These volcanics strike northeast and dip 5 to 20 degrees to the northwest. The two sequences are intruded by steeply dipping rhyolite to rhyodacite dikes and are generally associated with steeply dipping fault zones. These are overlain by pyroxene basalt. The volcanic sequence in stratigraphic order consists of: a) quartz andesite crystal tuff, b) fine-grained to aphanitic chocolate brown tuff, c) welded trachyte tuff, and d) trachyte crystal and crystal lapilli tuff with interbedded volcanogenic greywacke. Several north-northwest striking faults have been identified and are slightly offset by younger east-striking faults. The north-northwest striking faults apparently were the conduits for the mineralizing fluids which gave rise to mineralization at the North, Silver Creek (094E 075), Amethyst (094E 160), South (094E 161), Ridge (094E 162) and West (094E 163) prospects. The Toodoggone volcanics are affected by widespread weak propylitic alteration and weak silicification.

The southern portion of the Silver Pond property is capped by younger Sustut Group conglomerates in slight angular unconformity with the underlying Toodoggone volcanics.

Alteration associated with structurally controlled epithermal mineralization, in the area, consists of pervasive silicification grading outward into weaker silicification, sericitization, argillic and potassic alteration. An alteration zone, two kilometres across, cover much of the area and is marked by a gossan of abundant goethite, jarosite and hematite. Quartz, alunite, kaolinite, montmorillonite, dickite, illite, sericite, and minor amounts of barite, fluorite, limonite and pyrite comprise secondary minerals in intermediate to advanced argillic-altered zones (Forster, 1984).

Two general styles of acid-sulphate type epithermal gold-silver mineralization occur on the Silver Pond property: vein and breccia-type ore shoots and pods; such as the Silver Pond (West) prospect (094E 163) and the Silver Pond (Silver Creek) prospect (094E

CAPSULE GEOLOGY

075), and high-level stockwork-type mineralization such as the Silver Pond (North) prospect. Gold and silver are generally absent from intensely altered regions in the area, with pyrite and magnetite being the only visible metallic minerals (Forster, 1984).

The Silver Pond (North) prospect is related to the same regional fault that hosts the Silver Pond (West) and Silver Pond (Silver Creek) prospects. It is located 2.4 kilometres north-northwest of the Silver Pond (West) prospect. Initial interest in the area was triggered by identification of a zone of widespread gossan and hydrothermal alteration. Topography, alteration, resistivity and magnetics all show a pronounced north-northwest grain in the area.

A soil geochemical survey, conducted in 1984, outlined a north-northwest trending gold anomaly greater than 800 metres long. The anomaly occurs at the margin of a silica cap which contains the strongest silica-kaolinite-alunite alteration on the North zone.

The predominant rock type underlying the Silver Pond (North) prospect is porphyritic andesitic flows, which are overlain and interfinger with pyroclastics, lapilli tuffs and agglomerates derived from reworked andesitic material, all of the Toadoggonne Formation. The bedding attitude of tuffs and agglomerate beds is consistently striking 240 degrees and dipping 10 to 30 degrees northwest. The area is intersected by a suite of dikes ranging from felsic (andesite to rhyolite) to mafic; the mafic dikes being younger and showing no alteration. The felsic dikes are in part hosts for silicification, quartz veining and minor brecciation.

Three types of alteration are observed at the Silver Pond (North) prospect: a) strong silicification, b) phyllic and argillic alteration consisting of clay replacement of phenocrysts, and c) propylitic alteration consisting of calcite-epidote-chlorite-pyrite(-hematite).

Mineralization consists of a stockwork of multistage silica veinlets and stringers with variable amounts of pyrite, epidote, chlorite, barite and laumontite and occasionally traces of chalcopyrite and galena. The mineralization is sporadic and difficult to correlate between adjacent drillholes. Gold is strictly confined to multistage silica stringers and veinlets and not associated with disseminated pyrite. Gold mineralization is closely associated with rhyolite dikes. The alteration and mineralogy observed relative to epithermal models suggest there is potential for economic mineralization deeper in the system.

About 3000 metres of backhoe trenching were conducted on the North zone in 1987. Wide zones of strong pyritic-argillic alteration with an irregular pattern and separated by propylitic andesite, were intersected. Gold mineralization is restricted to millimetre-wide, multistage silica stringers with minor sulphide content. Where trenches were dug on soil gold anomalies and resistivity highs the trenching yielded widespread low-grade gold mineralization with sporadic high values ranging up to 28.8 grams per tonne gold over 1 metres (Assessment Report 16952).

In addition to backhoe trenching, approximately 2860 metres of diamond drilling in 19 holes was completed in 1987. The drilling has outlined an area of widespread, low-grade stockwork gold mineralization in the 1 to 2 grams per tonne range (Assessment Report 16952). Silver values are consistently low with weak intersections being noted about 200 metres vertically. Weighted average values, from 25 drillhole intersections with greater than 1 grams per tonne gold and silver, are 1.44 grams per tonne gold and 2.959 grams per tonne silver over 1 metres true width (Assessment Report 16952). Gold values range up to 2.05 grams per tonne over a true width of 3.0 metres including 5.98 grams per tonne over a true width of 0.5 metre (Assessment Report 16952).

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IPDM Nov/Dec 1983; Jan/Feb, 1984
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DATE CODED: 1985/07/24
DATE REVISED: 1992/03/26

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 070**

NATIONAL MINERAL INVENTORY:

NAME(S): **MESS, MESS 1-4, NEW MESS,**
AUDREY, AUDREY EAST, AUDREY WEST

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

LATITUDE: 57 04 36 N
LONGITUDE: 126 39 20 W
ELEVATION: 1700 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Two trenches expose galena, tetrahedrite, with lesser chalcopyrite and sphalerite in a quartz-barite-calcite vein, 6.7 kilometres to the south of the Kemess South occurrence (094E 094), about 260 kilometres north of Smithers (Assessment Report 10235).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6328364
EASTING: 642103

COMMODITIES: Silver Gold Lead Copper Zinc

MINERALS

SIGNIFICANT: Galena Tetrahedrite Chalcopyrite Sphalerite

ASSOCIATED: Quartz Barite Calcite Pyrite

ALTERATION: Limonite

COMMENTS: Quartz-barite-calcite veins occur in argillic alteration envelopes consisting of limonite and manganese oxide. Host volcanics are propylitized with argillic overprinting (Assessment Report 10235).

ALTERATION TYPE: Argillic Propylitic
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
MODIFIER: Faulted

DIMENSION: 12 x 2 x 1 Metres STRIKE/DIP:

COMMENTS: Quartz-barite-calcite vein in trench 1. Epithermal veins are Lower Jurassic (Bulletin 86).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Jurassic
Upper Triassic

GROUP

Hazelton
Takla

FORMATION

Toodoggone
Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Biotite Hornblende Ash Flow
Lapilli Breccia
Lapilli Tuff
Crystal Ash Tuff
Augite Plagioclase Porphyritic Andesite
Augite Plagioclase Porphyritic Basalt
Conglomerate
Greywacke
Crystal Tuff
Crystal Ash Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCHES

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Silver	856.3000	Grams per tonne
Gold	0.4250	Grams per tonne
Copper	0.3731	Per cent
Lead	5.2669	Per cent
Zinc	1.7435	Per cent

COMMENTS: Grades are from one of four samples from trench 1 taken in 1986.
REFERENCE: Assessment Report 15184.

CAPSULE GEOLOGY

The Mess prospect is located 6.75 kilometres north-northeast of the Kemess South occurrence (094E 094). Access to the property is from Smithers, some 260 kilometres to the south, or from the Sturdee airstrip. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Mess occurrence is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Mess prospect is underlain by volcanics and associated sediments of the Takla Group and Toodoggone Formation. Takla Group volcanic rocks are characterized by augite and plagioclase porphyry basalt and andesite, flows and breccias. Lithologies of the Toodoggone Formation include quartzose biotite hornblende phyric ash flows, lapilli tuff and breccia, and crystal ash tuff of the Adoogacho Member, conglomerate, greywacke and crystal tuff of the Moyez Member and crystal ash tuffs and flows of the upper volcanic cycle. These volcanic hostrocks are propylitically altered with argillic overprinting. Granodiorite and diorite crop out to the east of the showing. A northerly trending feldspar porphyritic monzonite crops out 5 metres to the west of trench 2.

The Mess occurrence is classified as an adularia-sericite type epithermal vein occurring along a northwest fault structure separating Takla and Toodoggone volcanics. Mineralization consists of quartz-barite-calcite veins with cockscomb and banded textures in argillic alteration envelopes consisting of limonite and manganese oxide. Galena, tetrahedrite and lesser disseminated chalcocopyrite, pyrite and rare sphalerite comprises vein mineralization. The vein is irregular and pinches out at depth and along strike. Dimensions of the vein are 12 by 1.5 by 1 metres where exposed by trench 1.

Assay results from systematic chip sampling over 6 metres of the wall of trench 1, yielded 501.94 grams per tonne silver and 0.24 gram per tonne gold in 1981 (Assessment Report 10235). Assay results from resampling of this vein in 1986 were 856.3 grams per tonne silver, 5.2 per cent lead, 1.7 per cent zinc, 0.37 per cent copper and 0.42 gram per tonne gold (Assessment Report 15184).

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291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
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IPDM Nov/Dec 1983
MIN REV September/October, 1982; July 12, 26; Aug. 2; Sept. 20, 1984;
July/August, 1986
N MINER May 28, 1981; October 13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/01/22

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 071**

NATIONAL MINERAL INVENTORY:

NAME(S): **RON 11, LAKE, LAKE 1-4,
 RON, RON 1-2, THUTADE,
 THUTADE 1-44, SHOWING 8, PRIORITY**

STATUS: Prospect
 REGIONS: British Columbia
 NTS MAP: 094E02W
 BC MAP:
 LATITUDE: 57 02 26 N
 LONGITUDE: 126 52 11 W
 ELEVATION: 1140 Metres
 LOCATION ACCURACY: Within 500M
 COMMENTS: Location of a silicified shear zone in a trench, 8 kilometres west-northwest of the Kemess South occurrence (094E 094), about 260 kilometres north of Smithers (Assessment Report 13022).

MINING DIVISION: Omineca
 UTM ZONE: 09 (NAD 83)
 NORTHING: 6323917
 EASTING: 629257

COMMODITIES: Copper Silver Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite
 ASSOCIATED: Quartz
 ALTERATION: Silica Sericite Chlorite Malachite Limonite
 ALTERATION TYPE: Silicific'n Sericitic Chloritic Oxidation
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Disseminated
 CLASSIFICATION: Hydrothermal Epigenetic
 TYPE: K01 Cu skarn I05 Polymetallic veins Ag-Pb-Zn±Au
 SHAPE: Bladed
 DIMENSION: 1 Metres STRIKE/DIP: TREND/PLUNGE:
 COMMENTS: Mineralization is hosted in a shear zone 1.0 metre wide (Assessment Report 13022).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
 DATING METHOD: Potassium/Argon
 MATERIAL DATED: Hornblende

LITHOLOGY: Plagioclase Augite Porphyritic Andesite
 Porphyritic Monzonite
 Quartz Monzonite
 Granodiorite
 Marble
 Argillite
 Chert
 Quartzite
 Breccia
 Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
 TERRANE: Stikine
 METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist Zeolite
 COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1984
 SAMPLE TYPE: Chip
 COMMODITY GRADE
 Silver 11.4000 Grams per tonne
 Copper 1.9200 Per cent
 Lead 0.0080 Per cent
 Zinc 0.0380 Per cent
 COMMENTS: Results from a 1.5-metre chip sample from the Priority trench.
 REFERENCE: Assessment Report 13022.

CAPSULE GEOLOGY

The Ron 11 showing is located approximately 8.2 kilometres west-northwest of the Kemess South occurrence (094E 094), some 260 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Thutade Lake area is largely underlain by andesite volcanics and related sediments of the Takla Group and small pockets of Asitka Group sediments. The major structures in the area are north-northwest striking faults, such as the Moose Valley fault and the Ingenika fault. Extensive exploration, including diamond drilling, was conducted on the ground around the Ron 11 showing between 1970 to 1984. Some nine mineral showings were found. The area hosts fault and/or skarn controlled copper, lead, zinc and silver occurrences throughout.

The Ron 11 showing is underlain by fine grained to coarse plagioclase and augite porphyritic, grey to greenish grey to maroon andesite, argillite, chert, quartzite, breccia and conglomerate of the Takla Group and the Early Jurassic Kemess pluton, a large intrusive body of porphyritic monzonite, quartz monzonite and granodiorite. Several bodies of marble have been mapped along the northeast corner of Thutade Lake belonging to the Asitka Group.

The Ron 11 showing consists of a silicified shear zone about 1.0 metre wide containing chalcopyrite (mainly altered to malachite), pyrite, sphalerite and galena. A halo of equal width consists of phyllic and chloritic alteration and limonitic staining.

A 1.5-metre chip sample from the Priority trench assayed 1.92 per cent copper, 0.038 per cent zinc, 0.008 per cent lead and 11.4 grams per tonne silver (Assessment Report 13022). Grab samples from the Priority trench analysed up to 3.9 per cent copper, 0.90 per cent lead, 1.12 per cent zinc and 169.37 grams per tonne silver (Assessment Reports 12401, 13022).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
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Ltd.)
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- GSC OF 306; 483
- GSC P 80-1A, pp. 27-32
- ECON GEOL Vol. 86, pp. 529-554, 1991
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- MIN REV September/October, 1982; July/August, 1986
- N MINER MAG March 1988, p. 1
- W MINER April, 1982; October 13, 1986
- WIN Vol. 1, #7, June 1987

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 768
REPORT: RGEN0100

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WWW <http://www.infomine.com/>

DATE CODED: 1992/01/07
DATE REVISED: 1992/01/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 072**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAU, MASON 1, PERRY MASON GRP.,
PERRY 1-2, MASON 1-2, ATTORNEY 2,
DEAN FR., DREAM FR., FAR SIDE FR.**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 16 17 N
LONGITUDE: 127 08 41 W
ELEVATION: 1765 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6349120
EASTING: 611874

COMMENTS: The location of drillholes 87PM6 and 87PM7, intersecting gold and silver mineralization in quartz veins, breccias and silicified zones, 2.5 kilometres southwest of the Baker mine (094E 026), about 280 kilometres north of Smithers (Assessment Report 10788).

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Tetrahedrite Argentite Chalcopyrite Sphalerite
COMMENTS: Tetrahedrite and argentite are present in silicified stockwork veins and breccias only.
ASSOCIATED: Quartz Chalcedony Pyrite
COMMENTS: Pyrite is present in skarns only.
ALTERATION: Silica Actinolite
COMMENTS: A date from the Cliff Creek zone of the Lawyers mine (094E 066) (Bulletin 86).

ALTERATION TYPE: Silicific'n Skarn

MINERALIZATION AGE: Lower Jurassic

ISOTOPIC AGE: 189.7 +/- 2.6 Ma DATING METHOD: Argon/Argon MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Vein Breccia Stockwork Disseminated
CLASSIFICATION: Epithermal Skarn
TYPE: H05 Epithermal Au-Ag: low sulphidation K02 Pb-Zn skarn
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 80 x 12 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Quartz veins, breccias and silicified zones occupy a zone about 80 metres long by 4 to 12 metres wide. Drillholes indicate that the zone is faulted (Assessment Report 16476).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Toodoggone	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Augite Feldspar Phyric Andesite
Feldspar Porphyry
Porphyritic Andesitic Crystal Tuff
Porphyritic Andesitic Lithic Tuff
Porphyritic Andesitic Breccia
Limestone
Marble
Quartz Monzonite

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Metsantan and overlying Attycelley members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1987

COMMODITY	GRADE	
Silver	100.4600	Grams per tonne
Gold	0.3100	Grams per tonne

COMMENTS: Grades are the weighted average of 11 samples over a 21.66 metres interval from drillhole 87PM6.

REFERENCE: Assessment Report 16476.

CAPSULE GEOLOGY

The Pau prospect is located approximately 2.5 kilometres southwest of the former Baker mine (094E 026), some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Pau prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Pau prospect is underlain by a discontinuous sequence of Permian to Middle Jurassic volcano-sedimentary rocks upwarped against and in fault contact with the Early Jurassic quartz monzonite to syenite Black Lake stock. The dominant lithologies are augite feldspar phyric andesitic flows of the Takla Group and feldspar porphyry of the Toodoggone Formation. Other lithologies cropping out in the vicinity include limestone and marble of the Asitka Group, and porphyritic andesitic crystal and lithic tuffs and breccias. Structurally the units in the area are intensively disrupted by steep dipping northeast-striking faults.

Mineralization consists of galena, tetrahedrite, argentite, chalcopyrite and sphalerite hosted in quartz veins, breccias and silicification forming a zone that has been traced over a strike length in excess of 80 metres with apparent surface widths between 4 and 12 metres. Minor amounts of chalcedony are found in some quartz veins. The Asitka Group limestone is locally metamorphosed to a pale green actinolite-bearing calcsilicate skarn. Skarn mineralization includes galena, chalcopyrite, sphalerite and pyrite. Most of both types of mineralization occur near the intrusive contact.

Property exploration consisting of soil, silt and rock geochemistry, geological mapping and prospecting, and ground magnetic surveys by Cheni Mines from 1980 to 1982, led to the discovery of a zone of intense quartz veining and silicification. This zone became known as the Black Pete zone. Hand trenching was completed over a the zone and assay values up to 3.77 grams per tonne gold and 298.28 grams per tonne silver across 1 metres were obtained (Assessment Report 16476). In 1985 and 1986, bulldozer and backhoe trenches were dug. Assay values up to 164.9 grams per tonne gold and 2694.85 grams per tonne silver over 3 metres were obtained (Assessment Report 16476).

In 1987, diamond drilling was undertaken to determine the continuity at depth of gold and silver mineralization in quartz veins, breccias and silicified zones. Core from eight drillholes, totalling 1122.13 metres, was intensely fractured indicating the area is strongly faulted. Continuity of ore intersections between drillholes was also poor. The best assay values were from drillhole 87PM6. A 0.5-metre intersection from 98 to 98.5 metres analysed 3.08 grams per tonne gold and 1165.7 grams per tonne silver (Assessment Report 16476). These values were from within a broader 21.6-metre wide anomalous zone yielding weighted averages of 100.46 grams per tonne silver and 0.31 gram per tonne gold (Assessment Report 16476). The upper 10.6 metres consisted of a volcanic breccia with a density of irregular quartz stringers followed by a quartz vein 10 metres wide.

Significant but sporadic gold mineralization was intersected in

CAPSULE GEOLOGY

all other drillholes. Drillhole 87PM3 intersected a 0.72-metre wide quartz vein, from 27.53 to 28.5 metres, which yielded 600.9 grams per tonne silver and 2.74 grams per tonne gold (Assessment Report 16476). Drillhole 87PM4 intersected a 0.75-metre quartz vein which analysed 157.7 grams per tonne silver and 0.343 gram per tonne gold (Assessment Report 16476). A 8.92-metre wide quartz vein intersected in drillhole 87PM1 analysed 123.42 grams per tonne silver and 0.343 gram per tonne gold over a 1-metre interval (Assessment Report

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/01

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 073**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARMOT LAKE**, LAW 1, LAWYERS WEST GRP.,
LAWYERS 1-3, LAWYERS 8-9, MINE LEASE 434,
ROAD 1-2, LAW 1-2, ATTORNEY 2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 18 06 N
LONGITUDE: 127 10 55 W
ELEVATION: 1730 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6352430
EASTING: 609540

COMMENTS: A quartz stockwork contains disseminated pyrite with lesser
chalcopyrite, galena and sphalerite, approximately 4.6 kilometres
northwest of the Baker mine (094E 026), about 280 kilometres north
of Smithers (Property File - T. Schroeter, Personal Notes (1985)).

COMMODITIES: Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma DATING METHOD: Argon/Argon MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
COMMENTS: A date from the Cliff Creek zone of the Lawyers mine (094E 066)
(Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Crystal Ash Tuff
Lapilli Ash Tuff
Lapilli Block Tuff
Andesite
Ash Flow
Lava Flow
Epiclastic
Lahar
Latite Lava Flow

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Attycelley and Metsantan members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

CAPSULE GEOLOGY

The Marmot Lake occurrence is located approximately 4.6 kilometres northwest of the former Baker mine (094E 026), some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone old camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric

CAPSULE GEOLOGY

trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Marmot Lake showing is underlain by the Attycelley and Metsantan members of the Toodoggone Formation. The Attycelley Member consists of a heterogeneous mixture of lapilli ash and block tuffs with interspersed ash and lava flows and interbedded epiclastics. The Metsantan Member consists of mostly latite lava flows with interflow lahar and mixed epiclastic and pyroclastic rocks (Bulletin 86).

Several major structures are observed disrupting the moderately dipping interbedded crystal tuffs and volcanic rocks underlying the occurrence. These structures are the southward extensions of major faults related to epithermal mineralization at the Silver Pond prospects (094E 069, 75 and 160-163) and the Lawyers mine (094E 066).

Mineralization at the Marmot Lake showing consists of disseminated pyrite with lesser chalcopyrite, galena and sphalerite in quartz veinlets within Toodoggone crystal ash tuffs.

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GSC OF 306; 483
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W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1985/09/13
DATE REVISED: 1992/04/03

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

CAPSULE GEOLOGY

The Lake 11 showing is located approximately 8.5 kilometres west-northwest of the Kemess South occurrence (094E 094), some 260 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

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The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Thutade Lake area is largely underlain by andesite volcanics and related sediments of the Takla Group and small pockets of Asitka Group sediments. The major structures in the area are north-northwest striking faults, such as the Moose Valley fault and the Ingenika fault. Extensive exploration, including diamond drilling, was conducted on the ground around the Lake 11 showing between 1970 to 1984; nine mineral showings were found. The area hosts fault and/or skarn controlled copper, lead, zinc and silver occurrences throughout.

The Lake 11 showing is underlain by fine to coarse grained plagioclase and augite porphyritic, grey to greenish grey to maroon andesite, argillite, chert, quartzite, breccia and conglomerate of the Takla Group and the Early Jurassic Kemess pluton, a large intrusive body of porphyritic monzonite, quartz monzonite and granodiorite. Several bodies of marble have been mapped along the northeast corner of Thutade Lake belonging to the Asitka Group.

The silicified and mineralized breccia at the Lake 11 showing trends northeasterly and consists of a 1.0-metre wide lens. Sampling yielded values of 1.29 per cent copper, 0.95 per cent lead, 1.88 percent zinc and 13.0 grams per tonne silver (Assessment Reports 13022, 18241).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
- EMPR GEM 1971-63-71; 1973-456-463
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- EMPR PF (Photogeologic Interpretation Map of the Northern Omineca
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Statement of Material Facts, (August 17, 1989), ECOS Resources
Ltd.)
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- GSC OF 306; 483
- GSC P 80-1A, pp. 27-32
- ECON GEOL Vol. 86, pp. 529-554, 1991
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- MIN REV September/October, 1982; July/August, 1986
- N MINER MAG March 1988, p. 1
- W MINER April, 1982; October 13, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/07
DATE REVISED: 1992/01/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 075**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER POND (SILVER CREEK)**, SILVER POND GROUP, SILVER CREEK,
SILVER POND, SILVER POND FR., ASAP,
SILVER SUN, SILVER GRIZZLY FR., SILVER CLOUD 1-3,
SILVER MARTEN, SILVER BULLET FR.

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 18 34 N
LONGITUDE: 127 13 11 W
ELEVATION: 1680 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6353235
EASTING: 607242

COMMENTS: The centre of an intense hydrothermally altered and mineralized zone on the Silver Creek claim (Assessment Report 16952, Figure 87-5).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Acanthite Tetrahedrite Electrum
ASSOCIATED: Quartz Pyrite Magnetite
ALTERATION: Silica Quartz Alunite Kaolinite Montmorillonite
Dickite Illite Sericite

COMMENTS: Alteration minerals also includes goethite, jarosite, barite, hematite, fluorite, limonite and pyrite.

ALTERATION TYPE: Silicific'n Sericitic Argillic Potassic
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma DATING METHOD: Argon/Argon MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 375 x 20 Metres STRIKE/DIP: 315/
COMMENTS: Mineralized zone. A date from the Cliff Creek zone of the Lawyers mine (094E 066) (Bulletin 86).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 200 +/- 7 Ma		
	DATING METHOD: Potassium/Argon		
	MATERIAL DATED: Biotite		
Cretaceous	Sustut	Tango Creek	

LITHOLOGY: Quartz Andesite Crystal Tuff
Andesite
Aphanitic Tuff
Welded Trachytic Tuff
Trachyte Crystal Lapilli Tuff
Greywacke
Rhyolite Rhyodacite Dike
Trachyandesite
Pyroxene Basalt

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Adoogacho and Metsantan members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1987

COMMODITY	GRADE	
Silver	238.8500	Grams per tonne
Gold	5.0100	Grams per tonne

COMMENTS: Grades are the best drill intercepts over a true width of 1.2 metres.
REFERENCE: Assessment Report 16952.

CAPSULE GEOLOGY

The Lower Jurassic Toodoggone Formation (Hazelton Group) volcanics form a northwest-trending belt at least 90 kilometres long and 35 kilometres wide preserved between the undivided Lower Jurassic Hazelton Group to the east and the Upper Cretaceous-Eocene (?) Sustut Group to the west. Where observed, they rest structurally on the Upper Triassic Takla Group. Toodoggone pyroclastic and epiclastic volcanic rocks are a predominantly calcalkaline andesitic to dacitic subaerial succession. The region as a whole resembles a synclorium in section from northwest to southeast. Potassium-argon studies of hornblende and biotite indicate the age of Toodoggone volcanism ranges from 204 to 182 Ma. This age appears to be divisible into two main groups: an older, lower stage of volcanism dominated by andesitic pyroclastics and flows characterized by widespread propylitic and zeolitic alteration; and a younger, upper stage of volcanism dominated by andesitic ash-flow tuffs which generally lack significant epithermal alteration. All the known epithermal gold-silver deposits and occurrences are restricted to the lower Toodoggone Formation volcanics and underlying units (Fieldwork 1988).

Toodoggone volcanic rocks display broad open folds or homoclines with attitudes generally less than 25 degrees dipping predominantly to the west. The overlying Sustut Group sedimentary rocks are structurally unaffected and are horizontal. A northwest-trending set of younger, steeply dipping faults and synvolcanic half-graben margins are the dominant structure in the region. Major structural breaks are postulated to have been caused, or be the result of, a northwest-trending line of volcanic centres. Small stocks are also aligned northwest, suggesting they were also influenced by the same structural trend. Subsequent to volcanism and intrusion, young faults are recognizable as northwest-trending lineaments. Major north-northwest fault systems are from west to east: Attorney, Moosehorn-McClair and Saunders-Jock. Most prominent gossans are aligned along this configuration of faults. The Attorney fault system passes through the Lawyers property (094E 066).

Two distinct mappable sequences of the Toodoggone volcanics, consisting of an older pyroclastic quartz andesite crystal tuff sequence (Adoogacho Member) and a younger trachyandesite sequence (Metsantan Member), are evident on the Silver Pond property. These volcanics strike northeast and dip 5 to 20 degrees to the northwest. The two sequences are intruded by steeply dipping rhyolite to rhyodacite dikes and are generally associated with steeply dipping fault zones. These are overlain by pyroxene basalt. The volcanic sequence in stratigraphic order consists of: a) quartz andesite crystal tuff, b) fine-grained to aphanitic chocolate brown tuff, c) welded trachyte tuff, and d) trachyte crystal and crystal lapilli tuff with interbedded volcanogenic greywacke. Several north-northwest striking faults have been identified and are slightly offset by younger east-striking faults. The north-northwest striking faults apparently were the conduits for the mineralizing fluids which gave rise to mineralization at the North (094E 069), Silver Creek, Amethyst (094E 160), South (094E 161), Ridge (094E 162) and West (094E 163) prospects. The Toodoggone volcanics are affected by widespread weak propylitic alteration and weak silicification.

The southern portion of the Silver Pond property is capped by younger Sustut Group conglomerates in slight angular unconformity with the underlying Toodoggone volcanics.

In the area, alteration associated with structurally controlled epithermal mineralization consists of pervasive silicification grading outward into weaker silicification, sericitization, argillic and potassic alteration. An alteration zone, two kilometres across, covers much of the area and is marked by a gossan of abundant goethite, jarosite and hematite. Quartz, alunite, kaolinite, montmorillonite, dickite, illite, sericite, and minor amounts of barite, fluorite, limonite and pyrite comprise secondary minerals in intermediate to advanced argillic-altered zones (Forster, 1984).

Two general styles of acid-sulphate type epithermal gold-silver mineralization occur on the Silver Pond property: vein and breccia-type ore shoots and pods, such as the Silver Pond (West) prospect (094E 163) and the Silver Creek prospect, and high-level stockwork-type mineralization such as the Silver Pond (North)

CAPSULE GEOLOGY

prospect (094E 069). Gold and silver are generally absent from intensely altered regions in the area, with pyrite and magnetite being the only visible metallic minerals (Forster, 1984).

The Silver Pond (Silver Creek) prospect lies 450 metres to the southeast, along a segment of the same fault that hosts the Silver Pond (West) prospect (094E 163) to the northwest. It is located along Cloud Creek and has little rock exposure.

The Silver Pond (Silver Creek) prospect consists of veins along a silicified and brecciated fault zone. The zone strikes 315 degrees parallel to Cloud Creek, and has been traced over a length of 375 metres and is 20 metres wide. It appears cut off by a fault on the southeast but is open-ended to the northwest.

Mineralization consists of disseminated acanthite, tetrahedrite and minor electrum (Forster, 1984). In 1985, a program consisting of 19 drillholes, tested this zone over a strike length of 250 metres. Zones of alteration and silicification were intersected in all 19 drillholes in 1985. Drill intersections indicate a steeply southeast-plunging ore shoot. The best drill intercepts were 5.01 grams per tonne gold and 238.85 grams per tonne silver over a true width of 1.20 metres, and 2.57 grams per tonne gold and 118.25 grams per tonne silver over a true width of 1.80 metres (Assessment Report 16952).

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W MINER April, 1982
N MINER October 13, 1986; November 16, 1987
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983; Jan/Feb, 1984
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Placer Dome File

DATE CODED: 1985/09/13
DATE REVISED: 1992/03/26

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 076**

NATIONAL MINERAL INVENTORY: 094E6 Au6

NAME(S): **GOLDEN STRANGER**, GOLDEN STRANGER 2-5, GST 1-3

STATUS: Developed Prospect

MINING DIVISION: Omineca

REGIONS: British Columbia

NTS MAP: 094E06W

BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 22 08 N

LONGITUDE: 127 21 14 W

ELEVATION: 1650 Metres

NORTHING: 6359648

EASTING: 599001

LOCATION ACCURACY: Within 500M

COMMENTS: The approximate location of the intersection of the Main and West zones, 6.0 kilometres southeast of Metsantan Lake and 11.0 kilometres west-northwest of the Lawyers mine (094E 066), on the west side of Lawyers Creek. Smithers is located 280 kilometres to the south (Assessment Report 18334).

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Covellite Chalcocite

Pyrite

ASSOCIATED: Quartz Chalcedony Amethyst

ALTERATION: Epidote Chlorite Carbonate Pyrite Silica

Jarosite

COMMENTS: The prospect has been classified as an adularia-sericite type epithermal occurrence (Bulletin 86).

ALTERATION TYPE: Propylitic Pyrite Silicific'n Argillic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Stockwork

CLASSIFICATION: Epithermal

TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 450 x 50 Metres STRIKE/DIP: 360/90

COMMENTS: The Main zone is 450 metres long by 50 metres wide, strikes north and dips vertically (Assessment Report 18334).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toodoggone

ISOTOPIC AGE: 193.8 +/- 2.6 Ma

DATING METHOD: Argon/Argon

MATERIAL DATED: Hornblende

LITHOLOGY: Crystal Lithic Tuff
Tuff Breccia
Rhyodacite
Trachyandesite Flow
Trachyandesite Flow Breccia
Aplite
Quartz Andesite
Trachyandesite
Aplite Dike

HOSTROCK COMMENTS: The date is the older of two ages for the Attycelley Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Spatsizi Plateau

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Indicated YEAR: 1988

QUANTITY: 498905 Tonnes

COMMODITY Gold GRADE 2.7400 Grams per tonne

COMMENTS: Preliminary data.

REFERENCE: Sutton Resources Ltd., Report to Shareholders, March 30, 1989.

CAPSULE GEOLOGY

The Golden Stranger prospect consists of an adularia-sericite type epithermal mineralization, located 6.0 kilometres southeast of Metsantan Lake and 11.0 kilometres west-northwest of the Lawyers mine (094E 066), on the west side of Lawyers Creek. Smithers is located 280 kilometres to the south. The occurrence lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Golden Stranger prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Golden Stranger prospect is underlain by massive Lower Jurassic Toodoggone volcanics comprised of crystal lithic tuff and tuff breccia of rhyodacite composition with interbedded trachyandesite flows and flow breccias. The volcanic sequence is cut by a series of north to northwesterly trending deep seated fracture systems. Irregular, elongate aplitic dike-like bodies follow the northerly trending deep seated fracture/fault system. Alteration associated with the fault/fracture system ranges from disseminated pyrite to strong propylitic alteration with abundant epidote, chlorite and carbonate. Associated with the aplitic intrusion is intense hydrothermal brecciation and associated silicification, veining and argillic alteration zones, hosting jarosite.

Multistage quartz veining and silicified breccia crosscut both the altered volcanics and the aplitic rocks. Some composite veins host chalcedonic quartz or drusy quartz and locally amethystine quartz-lined vugs.

Two divergent breccia zones comprise the Main and West zones. The Main zone consists of a breccia-quartz, vein-shear system striking approximately north with a near-vertical dip. The zone is 50 metres wide and extends for 450 metres in length. Pyrite, galena, sphalerite, chalcocite, chalcocite and covellite are hosted in a quartz-amethyst breccia system in hangingwall quartz-eye andesite in contact with an aplite dike. Although the zone is continuous, quartz veins within are not. The veins have an irregular, lensoidal, branching habit, with individual veins ranging from hairline to greater than 50 centimetres. The aplite is older than the mineralization but intrudes crystal tuff.

A northerly trench cut in the main zone in 1986 was sampled over 3.9 metres width and assayed 14.4 grams per tonne gold. The most southerly trench, located 390 metres on strike, yielded 1.37 grams per tonne gold over 4.0 metres width (Assessment Report 15633). In 1988, a followup drill program was conducted on the Golden Stranger prospect. Drillholes 19 and 23 to 25 yielded significant gold and silver intersections. Some of the better intersections are as follows (Assessment Report 17000).

DDH	Interval (metres)	Au (g\ t)	Ag (g\ t)
19	387-397	0.03	5.90
	397-407	11.55	6.20
23	252-257	2.71	47.70
24	427-437	3.40	1.60
	177-187	0.26	12.40
25	187-197	1.53	11.80
	262-267	5.75	10.40
	267-272	6.23	14.30

The West zone vein-breccia system is not as well developed as the main zone. However, in 1986, a sample from the West Splay zone assayed 7.75 grams per tonne gold (Assessment Report 15633). Followup drill results, in 1988, were not as encouraging as those from the Main zone, particularly for gold. The best results were from drillhole 3 from which samples analysed 0.03 gram per tonne gold and 3.1 grams per tonne silver over a 3.1-metre interval, from 32.6 to

CAPSULE GEOLOGY

35.7 metres. The 15-metre interval from 26.8 to 41.8 metres in the same drillhole analysed an average weighted value of 2.07 grams per tonne silver (Assessment Report 17000).

Preliminary data on the Golden Stranger property indicates 498,905 tonnes of ore grading 2.74 grams per tonne gold (Sutton Resources Ltd. report to shareholders, March 30, 1989 in Energy, Mines and Resources Canada Mineral Bulletin MR 223 (1989) - B.C. 268).

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
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DATE CODED: 1985/09/13
DATE REVISED: 1992/10/15

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 077**

NATIONAL MINERAL INVENTORY: 094E11 Pb1

NAME(S): **GOLDEN LION**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E11W 094E11E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 33 36 N
LONGITUDE: 127 16 02 W
ELEVATION: 1920 Metres

NORTHING: 6381048
EASTING: 603670

LOCATION ACCURACY: Within 500M

COMMENTS: Location is for grid coordinates 0+00N:0+00E, located on the southwestern flank of Claw Mountain approximately 3.5 kilometres southwest of the south end of Moosehorn Lake (Figure 2, Assessment Report 10900).

COMMODITIES: Gold Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Acanthite Sphalerite Galena Chalcopyrite
ASSOCIATED: Quartz Barite Pyrite Carbonate Hematite
ALTERATION: Silica K-Feldspar Sericite Malachite Montmorillonite
Adularia

COMMENTS: The prospect has been classified as an adularia-sericite type epithermal mineral occurrence (Bulletin 86). Refer to Fieldwork 1985, pages 167-174 for further information on the age of mineralization.

ALTERATION TYPE: Silicific'n Potassic Sericitic Argillic
MINERALIZATION AGE: Middle Jurassic
ISOTOPIC AGE: 176 +/- 6 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Vein Stockwork Disseminated Breccia
CLASSIFICATION: Epithermal Hydrothermal
TYPE: H05 Epithermal Au-Ag: low sulphidation H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 400 x 50 Metres STRIKE/DIP: TREND/PLUNGE: 140/
COMMENTS: Dimensions and trend of zone 3.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Crystal Tuff
Lapilli Tuff
Porphyry
Andesite Flow
Andesite
Sub Volcanic Intrusive

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine

INVENTORY

ORE ZONE: 3 REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Silver 24.6900 Grams per tonne
Gold 2.6000 Grams per tonne
Lead 6.5000 Per cent
Zinc 26.6000 Per cent
COMMENTS: A 1-metre sample (sample 2981, drillhole 84-7).
REFERENCE: Assessment Report 13324.

INVENTORY

ORE ZONE: 2

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1984

SAMPLE TYPE: Drill Core

COMMODITY

GRADE

Silver

629.6900

Grams per tonne

Gold

4.1100

Grams per tonne

COMMENTS: A 1-metre interval (sample 3250, drillhole 84-16) of mineralized quartz-carbonate stockwork.

REFERENCE: Assessment Report 13324.

CAPSULE GEOLOGY

The Golden Lion prospect is located on the southwestern flank of Claw Mountain approximately 3.5 kilometres southwest of the south end of Moosehorn Lake. It has been classified as an adularia-sericite type epithermal mineral occurrence (Bulletin 86).

The Golden Lion prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Golden Lion prospect is underlain by Toodoggone Formation crystal and lapilli tuffs. To the east the tuffs are in a northwest-striking fault contact with Takla Group fine-grained andesite flows. To the north, the Takla Group is intruded by coarse-grained granodiorite of the Black Lake stock.

Within the tuffs, adjacent and parallel to the fault, discontinuous areas of silicification occur along a 3 kilometre strike length. Associated with the silicification is an increase in disseminated pyrite and hematite. Quartz and quartz-barite stockwork with associated sericitic and argillic alteration locally flank the silicification. The silicification has been divided into three zones.

Zone 1, centred on grid coordinates 7+00S:0+70W (Assessment Report 10900), is a barren 75 by 25 metre zone of intense silicification and brecciation. Manganese is common and the zone exhibits occasional vuggy texture. Four drillholes for a total of 249.7 metres, were placed on this zone.

Zone 2, which had 841.6 metres drilled in seven holes, is centred on grid coordinates 1+50S:0+25E (Assessment Report 10900). Erratic silicification and veining occurs over a 300 by 200 metre area. Crystal and lapilli tuffs are cut by a number of subparallel east-dipping faults. Pinch and swell zones of intense silicification and brecciation occur within the faults. Adjacent to the faults local areas of quartz stockwork is developed. Quartz veins within and adjacent to the faults carry varying amounts of pyrite, acanthite, and occasional chalcocopyrite and galena. A 1-metre drill core interval of quartz-carbonate stockwork assayed 629.69 grams per tonne silver and 4.11 grams per tonne gold (Sample 3250, Hole 84-16, Interval 31-32 metres, Assessment Report 13324).

Zone 3, centred at grid coordinates 6+00N:1+70E (Assessment Report 10900), is exposed over a 400 by 50 metre area. Nine drill holes for a total of 1224.2 metres, were completed on this zone. Drilling intersected a feldspar pyroxene porphyry subvolcanic intrusion. The intrusion and the tuffs are potassically and argillically altered and host quartz stockwork and disseminated pyrite of variable intensity. The quartz veinlets carry coarse-grained sphalerite and galena with lesser chalcocopyrite, pyrite and acanthite. Pods of massive sulphides up to 1 metre across, in quartz gangue, occur within the porphyry. A 1-metre drill intersection of porphyry-hosted massive sulphide assayed 26.6 per cent zinc, 6.5 per cent lead, 24.69 grams per tonne silver and 2.6 grams per tonne gold (Sample 2981, Interval 39-40 metres, Hole 84-7, Assessment Report

CAPSULE GEOLOGY

13324).

A fourth area of silicification (with minor chalcopryrite, pyrite and malachite), occurs 500 metres to the southeast of zone 1. This zone covers an area of 20 by 10 metres and contains a 1.5-metre core interval of massive quartz. Adjacent to the silicification is 50 metres of montmorillonite alteration cut by barren quartz and quartz-carbonate veins.

A potassium-argon age determination yielded 176 +/- 6 Ma from relatively pure adularia from vein selvages at the Golden Lion prospect. This age reflects that of hydrothermal activity, which postdates the youngest volcanism of the Toodoggone Formation.

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
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Forster, D.B. (1984): Geology, Petrology and Precious Metal
Mineralization, Toodoggone River Area, North-Central British
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/14

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 078**

NATIONAL MINERAL INVENTORY: 094E6 Au4

NAME(S): **AL (RIDGE)**, RIDGE, AL 2,
HUMP 81 GROUP, SESAME 82 GROUP, FIJI 83 GROUP,
BULL GROUP, BONANZA 86 GROUP, AL,
AL 1-8, BERT, ERNIE,
BULL, OSCAR FRACTION, JO FRACTION,
RJ FRACTION

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 57 28 46 N
LONGITUDE: 127 21 17 W
ELEVATION: 1700 Metres

NORTHING: 6371952
EASTING: 598653

LOCATION ACCURACY: Within 500M

COMMENTS: The location of drillhole A87-101, one of many drillholes testing gold mineralization along a northeast trending silicified spine structure (Assessment Report 17655). The occurrence is 4.4 kilometres east from the summit of Alberts Hump, south of Abesti Creek, and 650 metres east from the AL (Bonanza) occurrence (094E 079). Smithers is approximately 300 kilometres to the south.

COMMODITIES: Gold Silver Lead

MINERALS

SIGNIFICANT: Pyrite Galena
COMMENTS: Galena and pyrite are reported (Bulletin 86).
ASSOCIATED: Quartz Barite Pyrite Hematite
ALTERATION: Silica Hematite Clay

COMMENTS: Argon-argon age on sericite from the AL (Bonanza) (094E 079) is circa 196 Ma, potassium-argon on sericite from the Al (BV) (094E 099) is 152 Ma and on andularia from Alberts Hump (094E 085) is 190 Ma (Bulletin 86). All are acid-sulphate type epithermal occurrences.

ALTERATION TYPE: Silicific'n Argillic Hematite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Tabular
MODIFIER: Faulted

DIMENSION: 213 x 106 x 5 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: The AL (Ridge) structure is 5.4 metres wide, 106.6 metres long and extends 213.3 metres downdip (Assessment Report 17655).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 204, 200 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite Flow
Andesite Tuff
Andesite Breccia
Andesite
Dacite Ash Flow
Dacite
Siliceous Rock
Trachydacite Ash Flow Tuff
Lapilli Tuff
Trachyandesite Flow

HOSTROCK COMMENTS: The ages given are the oldest ages of the Adoogacho and Metsantan members of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: RIDGE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY

GRADE

Gold

24.0000

Grams per tonne

COMMENTS: The weighted average from the 11.0 metre interval from 87.35 to 98.35 metres, in drillhole A87-101.

REFERENCE: Assessment Report 17655.

CAPSULE GEOLOGY

The AL (Ridge) developed prospect is a distinct northeast trending silicified spine structure, located 4.4 kilometres east from the summit of Alberts Hump, south of Abesti Creek, and 650 metres east from the AL (Bonanza) occurrence (094E 079). It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp. Smithers is approximately 300 kilometres to the south.

The occurrence is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it.

The AL (Ridge) prospect is a distinct northeast trending silicified spine structure which has been traced for over 700 metres. The structure is 5.4 metres wide, 106.6 metres long and extends 213.3 metres downdip.

Hostrocks are predominantly andesitic flows, tuffs and affiliated breccias. A dacitic ash flow is locally present. Crosscutting and longitudinal faults displace the AL (Ridge) structure both vertically and horizontally. The structure appears to pinch out in the northeast end; however, a fault may have offset this segment. In the southernmost exposures a segment of the probable AL (Ridge) structure is displaced 100 metres to the southeast.

The silica/clay alteration assemblage of rocks hosting the gold-silver mineralization appears in single or multiple and branching bands. Minor late barite-hematite veinlets are present but are non-metalliferous. Alteration widths of intense argillization and silicification vary from 5 to 30 metres. The mineralized zones, which contain pyrite (and galena, Bulletin 86), appear to be roughly lensoidal and very discontinuous. The multiphased silicified and hematized structure has a highly erratic distribution of gold and silver. The average gold grade is lower and silver grades are generally higher than those typically found in the AL (Thesis III) (094E 091), AL (BV) (094E 099) and AL (Bonanza) occurrences.

Drillholes A87-101 and 102, part of a widely spaced drill and trench program, indicate that the structure contains ore shoots (Assessment Report 17655). Assay results from these drillholes are as follows: drillhole A87-101 yielded a weighted average of 4.3 grams per tonne gold over the 5.0-metre interval from 79.35 to 84.35 metres and 24.0 grams per tonne gold over the 11.0-metre interval from 87.35 to 98.35 metres (Assessment Report 17655); drillhole A87-102 yielded a weighted average of 9.1 grams per tonne gold over the 1.5-metre interval from 159.25 to 160.75 metres, and 6.2 grams per tonne gold over the 4.72-metre interval from 176.25 to 181.66 metres (Assessment Report 17655).

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- EMPR BULL *86
- EMPR EXPL 1975-E163-E167; 1976-E175-E177; 1977-E216-E217; 1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345; 1983-475-488; 1984-348-357; 1985-C349-C362; 1986-A16; C388-C414; 1987-C328-C346; 1988-C185-C194
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- GSC BULL 270
- GSC OF 306; 483
- GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
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- IPDM Nov/Dec 1983
- MIN REV September/October, 1982; July/August, 1986
- N MINER Sept.29, 1983; July 12, Aug.2, Sept.20, 1984; March 5, 1985; Oct.13, 1986; Nov.2, 1987
- N MINER MAG March 1988, p. 1
- V STOCKWATCH July 28; Aug.12; 26; 29; Oct.19, 1987
- W MINER April, 1982
- WIN Vol. 1, #7, June 1987
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DATE CODED: 1985/09/13
DATE REVISED: 1992/10/30

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 079**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL (BONANZA)**, BONANZA, AL 2,
HUMP 81 GROUP, SESAME 82 GROUP, FIJI 83 GROUP,
BULL GROUP, GHOST, AL,
VERRENASS, BERT, ERNIE,
BULL, OSCAR FRACTION, JD FRACTION,
RJ FRACTION

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 28 46 N
LONGITUDE: 127 21 55 W
ELEVATION: 1660 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6371937
EASTING: 598020

COMMENTS: The approximate intersection of the Bonanza and Ghost zones located 3.75 kilometres east from the summit of Alberts Hump, south of Abesti Creek, and 4.35 kilometres southwest of Tuff Peak. Smithers lies some 300 kilometres to the south (Assessment Report 17655).

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Gold Electrum Tetrahedrite Tennantite Acanthite
Chalcopyrite Galena Sphalerite Silver Covellite
Pyrite

COMMENTS: Late-stage sulphide veining. Gold, electrum and acanthite occur in the Verrenass zone. Tetrahedrite and tennantite are late stage.

ASSOCIATED: Barite Quartz Pyrite
ALTERATION: Silica Dickite Alunite Illite Hematite
Goethite Zeolite Chlorite

COMMENTS: Date is from Fieldwork 1991, pages 207-216. The deposit is classified as an acid-sulphate type epithermal occurrence (Bulletin 86).

ALTERATION TYPE: Silicific'n Argillic Alunitic Propylitic
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 196.4 +/- 4.7 Ma DATING METHOD: Argon/Argon MATERIAL DATED: Sericite

DEPOSIT

CHARACTER: Disseminated Vein Stockwork

CLASSIFICATION: Epithermal

TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation

SHAPE: Irregular

MODIFIER: Faulted Fractured

DIMENSION: 610 x 50 x 15 Metres STRIKE/DIP: TREND/PLUNGE:

COMMENTS: The Al (Bonanza) structure has been tested over 610 metres strike length and has an average thickness of 50 metres and is 15 metres wide at the surface.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toodoggone

ISOTOPIC AGE: 204, 200 +/- 7 Ma

DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite Ash Flow Tuff
Andesite
Dacite Ash Flow Tuff
Dacite
Porphyritic Rhyodacite Dike
Trachydacite Ash Flow Tuff
Lapilli Tuff
Trachydacite
Trachyandesite
Trachyandesite Flow

HOSTROCK COMMENTS: The ages given are the oldest ages, respectively, of the Adoogacho and Metsantan members of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: AL REPORT ON: Y
CATEGORY: Measured YEAR: 1990
QUANTITY: 226775 Tonnes
COMMODITY: Gold GRADE: 10.2800 Grams per tonne
REFERENCE: George Cross News Letter No. 95 (May 16), 1990.

CAPSULE GEOLOGY

The AL (Bonanza) developed prospect is located 3.75 kilometres east from the summit of Alberts Hump, south of Abesti Creek, and 4.35 kilometres southwest of Tuff Peak (Assessment Report 17655). It lies within the Omineca-Cassiar mountains in the west-central part of the Toodoggone gold camp. Smithers lies some 300 kilometres to the south.

The Lower Jurassic Toodoggone Formation (Hazelton Group), a pyroclastic volcanic assemblage, forms a 100 by 25 kilometre northwest-trending belt extending from Thutade Lake in the south to the Stikine River in the north. These rocks are dominantly andesitic to dacitic in composition and have been divided into units consisting of interlayered lava flows, ash flows and lapilli and crystal tuffs, with subvolcanic equivalents and associated volcaniclastic and epiclastic rocks. The Toodoggone volcanics are cut by granitic rocks of the Early Jurassic Black Lake Suite and by subvolcanic intrusions related to Toodoggone volcanism. Two of the geologic units within the Toodoggone Formation underlie the AL property; these include the basal Adoogacho and Metsantan members. The Adoogacho Member is composed of trachydacite ash-flow tuffs, lapilli and finer tuffs, volcanic sandstone and conglomerate, and subvolcanic plugs (Bulletin 86). The overlying Metsantan Member is composed of trachyandesite flows with lenses of lapilli tuff and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member in part, directly overlies the basal Adoogacho Member and in part is in fault contact with it.

Three north trending fault systems, with little evidence of movement, transect a gently, south to southwest dipping sequence of dacitic ash flows and interspersed volcanogenic epiclastic beds of the Adoogacho Member (Economic Geology, Volume 86, 1991). The most easterly known structure, the Bonanza fault, strikes north and is steeply to vertically dipping, and appears to extend for over 5 kilometres from Moyez Creek valley in the north to Metsantan Mountain to the south. The AL (Bonanza) occurrence lies on this fault and the nearby AL (Ridge) occurrence (094E 078) lies on a northeastern splay of the main structure. The Thesis fault crosses the area on a northwest trend and lies to the west of the Bonanza fault. It has been traced for over three kilometres. A third southeast-trending structure, the BV fault, lies 800 metres to the south of the Thesis fault. The BV fault is more than 1600 metres long. They are characterized by strong, often complete argillization and silicification of the hostrocks.

Alteration zones, some of great areal extent (25-75 hectares), occur in large numbers on the property. The alteration zones are apparently structurally controlled, mainly by the Bonanza, Thesis and BV faults. Alteration zones typically contain intensely silicified cores surrounded by wide envelopes of argillic flooding. Subtypes of alteration, including silicification with pyrite, argillization with hematite/goethite, and silicification with hematite/goethite, have also been recognized. Drilling indicates that alteration intensities around the Bonanza structure are specific to individual volcanic horizons which may be flow tops or unconformable beds with differing composition or textural characteristics. Native gold with minor silver occurs within the silicified cores of many of the zones. This mineralization is almost always accompanied by barite and 2 to 7 per cent copper-rich sulphide.

The Bonanza structure, which is steeply to vertically dipping, cuts through gently southwest dipping volcanic rocks at approximate right angles to their strike. The structure contains tensional veining and stockworks (30 to 200 centimetres) and transgresses the entire Bonanza area without interruption by any faults. It trends northwest and cuts across the north Bonanza area. Branching fault splays striking northwest and northeast from the main Bonanza structure are evidenced by epithermal rock alteration patterns which are typically elongate, parallel to the structures. Crosscutting faults give this structure a sense of right-lateral displacement along strike and create discontinuities.

The AL (Bonanza) occurrence is composed of at least three main mineralized zones forming a north-trending lineament of gossans, silicified rocks hosted in the Bonanza structure and extending from the AL (Bonanza) occurrence to the Mets occurrence (094E 093), a

CAPSULE GEOLOGY

distance of over 5 kilometres. Hostrocks are andesitic-dacitic ash-flow tuff and is locally intruded by post-ore porphyritic rhyodacite dikes. These dikes pre-date most of the crossfaulting and are shuffled about along numerous lines of weakness. In some cases the dikes cut through and obliterate all evidence of mineralization except for xenoliths caught up inside the dike walls. The dike rocks are propylitically altered throughout and generally show evidence of shearing at contacts. The average width of the main silicified orebody is 10 metres.

Surface mineralization along the Bonanza structure occurs within irregular elongate zones separated by less altered to fresh unmineralized rocks. Associated veining is composed of quartz-(pyrite-chalcopyrite-galena-sphalerite), barite-quartz and barite assemblages carrying gold-silver grades over narrow widths. Mineralization in the high grade Verrenass zone consists of barite-hosted native gold, electrum and acanthite deposited in the acid-leached core (alunite) of an intensely altered north-northwest trending structure located at the northern end of the main Bonanza structure. Fine to very fine grained gold mineralization is hosted primarily in coarse barite crystals (vugs), veins and stockworks. Late stage tetrahedrite-tennantite occurs sporadically and is locally associated with gold mineralization. Quartz-dickite alteration is dominant adjacent to the mineralization and is enclosed by a quartz-illite-hematite assemblage. Results from the 1984 drill program on the Verrenass zone indicate a rapid vertical change from silicified and leached rocks with abundant barite and anomalous gold at or near the surface to a pyritic system at depth. The apparent feeder structure dips easterly to subvertically. The surface mineralization has less than 15 metres thickness (Assessment Report 13503).

The originally linear sheet-like Ghost orebody (subsurface Bonanza structure) is comprised of a series of individual mineralized blocks resultant from the net effect of the complicated structural pattern. The Ghost and Verrenass zones merge towards the south.

The AL (Bonanza) occurrence has been tested by drilling (greater than 100 drillholes) over 457 metres and trenching over 610 metres strike length. Numerous high grade, near-surface anomalous gold zones were intersected at the convergence of the Bonanza structure with the Ghost system. To date, mineralization appears to be a gently southwest-dipping sheet, ranging up to 50 metres in true thickness (First Quarter Report, 1987, Energex Minerals Ltd.). The Bonanza West zone is parallel to the Bonanza Main structure and is 24.3 metres wide with a 228.6 metres strike length. A diamond-drill hole intersection across 1.98 metres assayed 14.74 grams per tonne gold (George Cross News Letter No. 175, 1988). A best assay from a diamond-drill hole intersection in the Bonanza South Extension zone analysed 9.94 grams per tonne gold across 1.67 metres (George Cross News Letter No. 175, 1988).

Geochronological studies of marginal illite-bearing alteration from the Bonanza deposit (Verrenass zone) has resulted in a potassium-argon age determination of 171 +/- 6 Ma and is considered as the minimum age of alteration and mineralization (Fieldwork 1988). Subsequent geochronological studies of sericite alteration, taken from 73.8 metres depth in drillhole 88-33 from the same zone, has resulted in an argon-argon age range of 196.4 +/- 4.7 Ma (steps 1, 2 and 5) to 195.9 +/- 5.9 Ma (steps 6, 7 and 8) (Geological Fieldwork 1991, pages 207-216). While the plateau age of 207.7 +/- 2.7 Ma is inconsistent with the known age of the hostrocks, the two step ages are considered more reliable than the previous potassium-argon age.

Established reserves are 2,177,000 recoverable grams gold in 226,775 tonnes of 10.28 grams per tonne gold (George Cross News Letter No. 95 (May 16), 1990).

AGC Americas Gold Corporation and Antares Mining and Exploration Corporation conducted in-fill drilling (13 holes) on the Bonanza zone in 1997 totalling 1712 metres. AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

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- EMPR BULL *86
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1989; May 4, 1998
- N MINER MAG March 1987
- NAGMIN Nov.8, 1985
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Mineralization, Toodoggone River Area, North-Central British
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Falconbridge File

DATE CODED: 1985/09/13
DATE REVISED: 1992/10/30

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 080**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLDEN FURLONG**, CHUTE, ANTOINT LOUIS,
SURPRISE, WINKLE, GEROME,
TINKLE FRACTION, FURLONG, OSCAR FRACTION,
JD

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 28 13 N
LONGITUDE: 127 19 59 W
ELEVATION: 1660 Metres

NORTHING: 6370963
EASTING: 599977

LOCATION ACCURACY: Within 500M

COMMENTS: The location given for the prospect, which consists of a structurally controlled alteration and mineralization zone hosting native gold, is the approximate centre of trench 1 (Assessment Report 10482). The prospect is located 3.25 kilometres southeast of Tuff Peak and 2.25 kilometres south-southwest of the AI (Bonanza) occurrence (094E 079) (Assessment Report 10482). Smithers is located 280 kilometres to the south.

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Gold
ASSOCIATED: Quartz Chalcedony Hematite
ALTERATION: Silica Chalcedony Clay Alunite
COMMENTS: The prospect is classified as an acid-sulphate type epithermal mineral occurrence (Bulletin 86). Five to seven stages of silicification have been recognized.

ALTERATION TYPE: Silicific'n Argillic Alunitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
DIMENSION: 200 x 60 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The alteration and mineralization zone is traceable for 200 metres strike length and varies from 25 to 60 metres width (Assessment Report 10482).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIIC AGE:	193.8 +/- 2.6 Ma		
DATING METHOD:	Argon/Argon		
MATERIAL DATED:	Homblende		

LITHOLOGY: Feldspar Homblende Crystal Tuff
Andesite
Tuff
Flow
Epiclastic
Dike
Tuffaceous Volcanic

HOSTROCK COMMENTS: The date is the older of two ages for the Attycelley Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1981

COMMODITY	GRADE	
Silver	10.2000	Grams per tonne
Gold	0.4250	Grams per tonne

COMMENTS: Gold from a 0.5-metre interval from 185.3 to 185.8 metres; silver from a 0.5-metre interval from 177.6 to 178.1 metres, all from DDH A82-2.
REFERENCE: Assessment Report 10708.

CAPSULE GEOLOGY

The Golden Furlong prospect consists of a structurally controlled alteration and mineralization zone hosting native gold (Assessment Report 10482). The prospect is located 3.25 kilometres southeast of Tuff Peak and 2.25 kilometres south-southwest of the Al (Bonanza) prospect (094E 079) (Assessment Report 10482). Smithers is located 280 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The Golden Furlong prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Native gold is hosted in structurally controlled, generally linear zones of multiphase alteration. Peripheral wallrock alteration passes from quartz-clay-hematite towards the centre of the zone.

The geology of the Golden Furlong prospect is complex. The prospect is situated near the northern half of a caldera complex on the neighboring Al claims. A moderately thick section of mainly tuffaceous, subaerial volcanics with minor flow, intrusive and reworked epiclastic equivalents comprise lithologies underlying the occurrence (Assessment Report 10482). This sequence is part of the Attycelley Member of the Toodoggone Formation and appears to be nearly flat lying with occasional shallow dips. Intrusive units occur predominantly as dikes. The zone consists of intense, multiphase silicification, exposed as a spine of rock which can be traced for over 200 metres strike length and 25 to 60 metres width (Assessment Report 10482). At least 5 and as many as 7 different phases of silicification and veining have been recognized. Buff to grey-brown chalcidonic silicification comprises the most dominant phase of alteration, which is cut by grey quartz-filling hydrothermal breccia fractures. Less common are hematitic breccia veins of silicification. The latest alteration consists of white to grey quartz veinlets and drusy, open-space infillings often coated with an iron stain. Spotty zones of intense clay and sulphate alteration (alunite) become increasingly common towards the northern end of the zone. The zone is hosted by feldspar hornblende crystal tuffs (Assessment Report 10482).

Trace native gold was discovered in drusy quartz-filled vugs and along fractures at the southern tip of the zone (Assessment Report 10482).

In 1981, results from subsequent trenching, in 1981, of this zone were generally disappointing. Standard panel samples (1 by 5 metres) were taken from 4 trenches. Some of the better silver and gold assay results were from trenches 1 and 2. Sample 70759, from Trench 1, analysed 1954 grams per tonne silver and 0.19 gram per tonne gold (Assessment Report 10482). Sample 71081, from Trench 2, analysed 1268 grams per tonne silver and 0.09 gram per tonne gold (Assessment Report 10482; note these silver values taken from figure 4b are suspect. Most likely a typographical or conversion error has occurred and they are a magnitude of 1 or 2 less than recorded).

Assay results from a drill program conducted in the same year,

CAPSULE GEOLOGY

consisting of 2 NQ holes totalling 395.5 metres, was also disappointing. Drillhole A82-2 yielded the highest assay results. A 0.5-metre interval from 177.6 to 178.1 metres, analysed 10.2 grams per tonne silver and 0.95 gram per tonne gold (Assessment Report 10708). A 0.5-metre interval from 185.3 to 185.8 metres analysed 1.5 grams per tonne silver and 0.425 gram per tonne gold (Assessment Report 10708). This drillhole is about 150 metres east and slightly north of Trench 1.

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GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
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N MINER October 13, 1986
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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/07/24
DATE REVISED: 1992/10/20

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094E 081**

NATIONAL MINERAL INVENTORY:

NAME(S): **AWESOME** LAST, NEL 1,
NEL 2, NEL 3, NEL 4

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

LATITUDE: 57 06 32 N
LONGITUDE: 126 43 25 W
ELEVATION: 1400 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Trenching has revealed a variably silicified zone 20 to 40 metres wide, located approximately 25 kilometres southeast of the Sturdee airstrip, about 270 kilometres north of Smithers (Assessment Report 11174).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6331797
EASTING: 637874

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Hematite Calcite
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Propylitic Argillic Oxidation
MINERALIZATION AGE: Jurassic

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
DIMENSION: 800 x 30 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Silicified zone is 800 metres long by 20 to 40 metres wide, hosting Jurassic epithermal low-sulphide quartz-calcite veins up to 2 metres wide (Assessment Report 11174; Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Lapilli Ash Tuff
Lapilli Block Tuff
Andesite
Ash Flow
Lava Flow
Epiclastic
Porphyritic Augite Basalt
Basalt Andesite Lava Flow
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1982
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 58.5000 Grams per tonne
Gold 0.7300 Grams per tonne

COMMENTS: Grades are from panel (chip/channel (?)) sample 44 from trench 1.
REFERENCE: Assessment Report 11174.

CAPSULE GEOLOGY

The Awesome prospect is located approximately 25 kilometres southeast of the Sturdee airstrip in the Toodoggone gold camp, some 270 kilometres north of Smithers. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain

CAPSULE GEOLOGY

by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Awesome prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Locally, the Awesome prospect is underlain predominantly by lithologies of the Attycelley Member of the Toodoggone Formation. Nonwelded lapilli-ash tuff, subordinate lapilli-block tuff with interspersed ash flows and lava flows and interbedded epiclastics comprise lithologies of the Attycelley Member. Rocks of the Takla Group to the immediate west of the Awesome prospect are generally massive, dark, coarse-grained porphyritic augite basalt, fine-grained aphyric basaltic andesite lava flows with subordinate interbeds of lapilli tuff and volcanic breccia (Bulletin 86).

Vuggy, quartz-veined andesitic lapilli tuff and hematitic quartz float occur over an area of about 800 metres in length and some 50-100 metres in width at the Awesome prospect. Trenching has revealed that the source of this material is a variably silicified zone between 20-40 metres in width. Several types of silicification comprise this zone. There is a hematitic quartz breccia with at least three stages of silicification and brecciation up to 2 metres wide, large hematitic quartz-calcite veins up to 1.5 metres wide, pervasive silicification up to 4 metres wide, often hematitic and includes some vuggy quartz and calcite veinlets, and quartz veins of variable intensity and width (up to 2 centimetres and banded). Calcite may or may not be present as late-stage open-spaced fillings. The dominant alteration is a zone of propylitization which envelopes the silicified zone. Narrow zones of argillic-altered lapilli tuff occur within the more intensely silicified portions of the system. Mineralization consists of minor pyrite and trace malachite with anomalous gold and silver values.

Two trenches were opened across this silicified zone. Panel samples 1.0 by 0.5 metre were taken at 0.5-metre intervals from the trenches. One of these samples was taken 10 metres from the northern end of trench 1 and consisted of a grey to maroon quartz-calcite-hematite vein with rare malachite. Analytical results of this sample were 58.5 grams per tonne silver, 0.73 gram per tonne gold, 0.042 per cent lead, 0.0146 per cent copper and 0.0031 per cent zinc (Assessment Report 11174).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- W MINER April, 1982

RUN DATE: 26-Jun-2003
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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 797
REPORT: RGEN0100

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DATE CODED: 1985/09/13
DATE REVISED: 1992/01/23

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 082**

NATIONAL MINERAL INVENTORY:

NAME(S): **WRICH 2**, WRICH

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 08 34 N
LONGITUDE: 126 45 46 W
ELEVATION: 1680 Metres

NORTHING: 6335499
EASTING: 635368

LOCATION ACCURACY: Within 500M

COMMENTS: Location of drillhole 87-W3, intersecting a zone of multiphase breccia, 9 kilometres north of the Kemess North occurrence (094E 021) at the southern end of the Toodoggone gold camp (Assessment Report 16470).

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Chalcedony Clay
ASSOCIATED: Chalcedony Quartz
ALTERATION: Chalcedony Quartz Clay Alunite Pyrophyllite
Chlorite

COMMENTS: Fumarolic alteration consists of an intensely leached and oxidized zone of clay, iron and manganese oxides, silica, alunite and pyrophyllite.

ALTERATION TYPE: Silicific'n Propylitic Argillic Oxidation Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 700 x 150 Metres
COMMENTS: A zone of intense clay-pyrophyllite alteration.

STRIKE/DIP: TREND/PLUNGE: 160/

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Lapilli Ash Tuff
Lapilli Block Tuff
Andesite
Ash Flow
Lava Flow
Epiclastic
Welded Dacitic Ash Flow
Porphyritic Augite Basalt
Basaltic Andesite Lava Flow
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1982
SAMPLE TYPE:	Grab		
COMMODITY	GRADE		
Silver	699.4300	Grams per tonne	
Gold	6.5800	Grams per tonne	

COMMENTS: Best grab sample of chalcedony, clay and iron oxides from the alteration zone.

REFERENCE: Assessment Report 10705.

CAPSULE GEOLOGY

The Wrich 2 prospect is located 9.25 kilometres north of the Kemess North prospect (094E 021) at the southern end of the

CAPSULE GEOLOGY

Toodoggone gold camp. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Wrich 2 occurrence is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The ground was originally explored on the basis of anomalous gold values in stream sediments and favourable geology. A diamond drilling program, consisting of 5 holes, was conducted in 1987 to delineate conductors from a VLF electromagnetic survey and a electromagnetic resistivity survey. Drilling confirmed the presence of intense faulting characterized by several large clay zones.

Locally, the Wrich 2 prospect is underlain predominantly by lithologies of the Attycelley and Saunders members of the Toodoggone Formation. Nonwelded lapilli-ash tuff, subordinate lapilli-block tuff with interspersed ash flows and lava flows and interbedded epiclastics comprise lithologies of the Attycelley Member. The Saunders Member consists of partially welded, crystal-rich dacitic ash flows. To the southwest these rocks are in fault contact with Takla Group volcanics. Rocks of the Takla Group consist of generally massive, dark, coarse-grained porphyritic augite basalt, fine-grained aphyric basaltic andesite lava flows with subordinate interbeds of lapilli tuff and volcanic breccia (Bulletin 86). A major fault has a variable strike from 010 degrees to 160 degrees and in turn is crosscut by a later fault striking 070 degrees, displacing stratigraphy approximately 15 metres.

A zone of intense clay-pyrophyllite alteration 700 metres long by 150 metres wide, trends approximately 160 degrees and occurs in Toodoggone crystal and lapilli tuffs. Alteration consists of chalcedony, clay, iron oxides, manganese oxides, quartz, alunite and pyrophyllite. This alteration zone is bordered by a propylitic zone consisting mainly of chlorite.

A grab sample of chalcedony, clay and iron oxides collected from this alteration zone in 1981 assayed 699.43 grams per tonne silver and 6.58 grams per tonne gold (Assessment Report 10705). Results from a drill program in 1987 were generally poor. The best results were drillhole 87-W3 over a one metre interval from 81 to 82 metres (sample 25187) which assayed 126.8571 grams per tonne silver (Assessment Report 16470).

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GSC OF 306; 483
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N MINER MAG March 1988, p. 1

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PAGE: 800
REPORT: RGEN0100

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WIN Vol. 1, #7, June 1987

DATE CODED: 1985/09/13
DATE REVISED: 1992/01/24

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 083**

NATIONAL MINERAL INVENTORY:

NAME(S): **ARG, ADRIAN, PAUL,
OTTO, IAN, ARGUS,
ARGUS 1-2, ARGUS 1-4, OJ,
OJ 1-4, ORANGE, PIL NORTH,
PIL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

LATITUDE: 57 19 11 N
LONGITUDE: 126 57 18 W
ELEVATION: 1700 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample SC-40-80-15, 9.4 kilometres due south of
Toodoggone Lake, north of Jock Creek, and 6.75 kilometres
north-northeast of the Shasta occurrence (094E 050) (Assessment
Report 8574). The showing is located in the central part of the
Toodoggone gold camp, approximately 290 kilometres north of Smithers.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6354827
EASTING: 623151

COMMODITIES: Copper Lead Gold Silver

MINERALS

SIGNIFICANT: Copper Bornite Chalcocite Pyrite Chalcopyrite
Galena

COMMENTS: Minor chalcopyrite is observed in fractures in quartz monzonite.

ASSOCIATED: Quartz Barite

COMMENTS: Barite is reported nearby.

ALTERATION: Clay Silica Pyrite Chlorite Epidote

Malachite

ALTERATION TYPE: Argillic Silicific'n Propylitic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Porphyry Hydrothermal
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			
Jurassic	Hazelton	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Andesitic Tuff
Andesite
Gossan
Quartz Monzonite
Mafic Dike
Feldspar Porphyritic Flow
Crystal Lapilli Tuff
Pyroclastic Breccia
Lahar
Volcanic Conglomerate

HOSTROCK COMMENTS: The date is the oldest age of the Metsantan Member. The McClair stock
of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab

YEAR: 1980

COMMODITY	GRADE	
Silver	4.3000	Grams per tonne
Gold	0.3300	Grams per tonne
Copper	0.0380	Per cent
Lead	0.5500	Per cent

COMMENTS: Sample SC-40-80-15, a grab sample of hornblende diorite and quartz porphyritic monzonite.

REFERENCE: Assessment Report 8574.

CAPSULE GEOLOGY

The Arg showing is located 9.4 kilometres due south of Toodoggone Lake, north of Jock Creek, and 6.75 kilometres north-northeast of the Shasta occurrence (094E 050). The showing is located in the central part of the Toodoggone gold camp, approximately 290 kilometres north of Smithers.

The Arg showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Geological mapping in the Arg showing area shows the area to be underlain by both undivided Jurassic Hazelton Group and the Toodoggone Formation of the Hazelton Group. Feldspar porphyritic flows, crystal lapilli tuffs, pyroclastic breccia, lahar and volcanically derived conglomerate, mudstone and greywacke comprise lithologies of the Hazelton Group, and are believed to be slightly older than those of the Toodoggone Formation. They are generally found in fault contact with the Metsantan Member of the Toodoggone Formation and crop out east of the fault. The Metsantan Member, described regionally as consisting of trachyandesite flows with lenses of lapilli tuff, lahar; minor volcanic sandstone and conglomerate, occurs west of the fault (Bulletin 86). Within the Arg showing area a syenite to quartz monzonite and granodiorite to quartz diorite stock, of the Early Jurassic Black Lake Suite, occurs along the fault contact separating the two volcanic sequences. This northwest trending, lens-shaped stock is informally recognized as the McClair stock (Assessment Report 15264). Late mafic dikes cut the entire sequence.

The Arg showing area is dominated by a northwesterly trending set of structures represented by younger steeply dipping faults and synvolcanic half-graben margins exhibited in Hazelton Group volcanics. Younger post-volcanic and intrusive faults also transect the area with a northwesterly trend. Most of the prominent gossans in the area are also aligned along this trend.

There are numerous gossans in the Arg showing area. They are marked by an extensive zone of disseminated pyrite and intense propylitic alteration (chlorite and epidote). Argillic alteration, consisting of clays, occur along faults. Locally, silicification consisting of blue-white silica with disseminated pyrite is found. Minor amounts of galena and malachite staining have also been found.

Mineralization consists of native copper, bornite, chalcocite and pyrite with anomalous gold-silver in a quartz breccia zone within argillically altered andesitic tuffs (T. Schroeter, personal communication). Mineralization is associated with strong silicification zones and extensive veining with vuggy quartz (Assessment Report 8574). Minor chalcopyrite is also observed in fractures in quartz monzonite (Assessment Report 8574). Barite is also reported near the Arg showing.

Several samples taken in 1980 yielded anomalous results. Sample SC-40-80-15 analysed 0.33 gram per tonne gold, 4.3 grams per tonne silver, 0.55 per cent lead, 0.038 per cent copper and 0.022 per cent zinc (Assessment Report 8574). In 1986, assay values from sample

CAPSULE GEOLOGY

R262 were 1.6 grams per tonne silver; sample R261 analysed 1.0 gram per tonne silver (Assessment Report 15264).

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N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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DATE CODED: 1985/09/13
DATE REVISED: 1992/11/18

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 084**

NATIONAL MINERAL INVENTORY:

NAME(S): **PORPHYRY PEARL**, MOOSE 3, MOOSE-82 GROUP,
MOOSE, MOOSE 1-3, BULL MOOSE,
WAS #1, CALF MOOSE, HORN 2 FRACTION,
SCREE 1-3, GAS, GAS 2,
PEARL

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 27 45 N
LONGITUDE: 127 12 50 W
ELEVATION: 1340 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of drillholes 85-M-17 and 85-M-18, intersecting a zone of auriferous quartz-carbonate veins, located approximately 18 kilometres north-northwest of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 13961).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6370279
EASTING: 607146

COMMODITIES: Gold Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite
ASSOCIATED: Quartz Pyrite Magnetite Hematite Carbonate
Sericite Anhydrite Gypsum
ALTERATION: Clay Sericite Quartz Pyrite Hematite
ALTERATION TYPE: Argillic Sericitic Potassic

MINERALIZATION AGE: Middle Jurassic
ISOTOPIC AGE: 168 +/- 6 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Porphyry Hydrothermal
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Irregular
DIMENSION: 1 Metres STRIKE/DIP: 080/70E TREND/PLUNGE:
COMMENTS: A quartz vein in the west bank of Moosehorn Creek is 1.2 metres wide; veins in drill core are up to 0.4 metre wide. An age date from the Metsantan Lake showing (094E 035) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 200 +/- 7 Ma		
	DATING METHOD: Potassium/Argon		
	MATERIAL DATED: Biotite		
Lower Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Feldspar Hornblende Crystal Tuff
Feldspar Hornblende Lapilli Tuff
Andesite
Intrusive Breccia
Tuff Breccia
Ash Flow Tuff
Dacitic Porphyry Flow
Granodiorite

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Metsantan and McClair members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Spatsizi Plateau

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1985

COMMODITY	GRADE	
Silver	14.0000	Grams per tonne
Gold	13.3000	Grams per tonne
Copper	0.1100	Per cent
Lead	1.0900	Per cent
Zinc	2.2700	Per cent

COMMENTS: Sample 13969 taken from the interval 36.45 to 36.85 in drillhole 85-M-17.

REFERENCE: Assessment Report 13961.

CAPSULE GEOLOGY

The Porphyry Pearl prospect is located approximately 18 kilometres north-northwest of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The camp 1 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Porphyry Pearl prospect is underlain by intermediate porphyritic rocks of the McClair Member of the Toodoggone Formation. These include feldspar hornblende crystal and crystal lapilli tuffs, and tuff breccias, a thin ash-fall tuff and lesser dacite porphyry flows. The volcanic sequence appears to dip moderately to the northeast. Narrow and scattered basalt and andesite dikes are uncommon around the Porphyry Pearl prospect but are widespread to the east. Toodoggone volcanics are intruded and altered by an Early Jurassic synvolcanic, hypabyssal granodiorite intrusive complex which lies on a major northwest-striking fault structure which runs from McClair Creek through the JD prospect (094E 065) and northward.

Initial property exploration in the area of the Porphyry Pearl prospect, was focused on lead and zinc sulphides in quartz veins about 675 metres southeast and along strike from the present Moose 1 prospect (094E 031). The Porphyry Pearl prospect was discovered in 1973 in the west bank of, and near the headwaters of Moosehorn Creek. Lead, zinc, copper, silver and gold quartz vein mineralization are exposed over about 1.22 metres width, striking about 080 degrees and dipping about 70 degrees to the southeast. Boundaries with country rocks are heavily pyritized with several sporadic clay bands.

Porphyry-style mineralization consists of pyrite, sphalerite, chalcopyrite and galena in veins of quartz, sericite, carbonate, anhydrite, magnetite and hematite in a potassic-altered host. Anhydrite and/or gypsum veins dominate below 150 to 180 metres and host varying amounts of copper, zinc, lead and iron sulphides. Low-grade gold and silver mineralization also exists, suggestive of a porphyry copper-gold-silver system. Multiphase intrusive breccias are present locally.

In 1974, four drillholes totalling 494 metres, were drilled to test widely-spaced geophysical anomalies. Drillhole MM-2 intersected the best mineralization consisting of pyrite (up to 6 per cent), magnetite and base metal sulphides hosted in quartz veins and veinlets. This hole also reported anomalous gold (Assessment Report 13961). In 1982, core from the 1974 drill program was re-examined, sampled and assayed. Assay results indicated only weakly anomalous values over sporadic intervals. The only exception to this was a lower section where a zone of gold and copper mineralization was intersected in a porphyritic hypabyssal intrusive rock. Sample 2-81-80, from the 1-metre interval (92.7 to 93.7 metres) analysed 5.0 grams per tonne silver, 4.93 grams per tonne gold, 0.1460 per cent copper, 0.027 per cent zinc and 0.0051 per cent lead (Assessment Report 10291).

CAPSULE GEOLOGY

Two holes were drilled in 1982 to test the continuity of mineralization that was intersected in drillholes. The best assay values from these two drillholes were 690.0 grams per tonne silver, 17.0 grams per tonne gold, 0.41 per cent lead, 0.338 per cent copper and 0.183 per cent zinc (Assessment Report 11238).

Most recently, in 1985, two more holes were drilled. They both intersected a zone of auriferous quartz-carbonate-sulphide veins striking nearly east and dipping moderately to steeply north. Both holes also intersected anomalous silver, gold and base metal mineralization. A 0.40-metre interval from a narrow quartz-sulphide vein in drillhole 85-M-17 analysed 13.3 grams per tonne gold, 14.0 grams per tonne silver, 2.27 per cent zinc, 1.09 per cent lead and 0.11 per cent copper (Assessment Report 13961).

AGC Americas Gold Corp. and Antares Mining and Exploration Corporation hold the property as the Moose claims. AGC acquired all the Toadoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

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IPDM Nov/Dec 1983
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N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW <http://www.agcgold.com>

DATE CODED: 1985/09/13
DATE REVISED: 1992/04/06

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 085**

NATIONAL MINERAL INVENTORY: 094E6 Cu6

NAME(S): **ALBERTS HUMP**, AL 8, HUMP 81 GROUP,
SESAME 82 GROUP, HUMP 84 GROUP, HUMP 86 GROUP,
AL, AL 1-8, BERT,
ERNIE, BULL, OSCAR FRACTION,
HYUK 1,3 FRACTION, NII FRACTION

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 28 32 N
LONGITUDE: 127 25 14 W
ELEVATION: 1720 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6371425
EASTING: 594716

COMMENTS: The location of drillhole A82-11, testing part of a large irregularly-shaped zone, roughly 1 square kilometre, of intensive and extensive clay and quartz alteration (Assessment Report 11157). The prospect is located 500 metres due east of the summit of Alberts Hump, south of Abesti Creek, and 3.2 kilometres west of the AL (Bonanza) occurrence (094E 079). Smithers is 300 kilometres to the south.

COMMODITIES: Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Silica Clay Alunite Anatase Barite
ALTERATION: Silica Clay Alunite Pyrite Anatase
Dickite Chlorite Epidote
COMMENTS: Nacrite is also present as an argillic alteration mineral. Alunite is sodium-rich (Bulletin 86).
ALTERATION TYPE: Silicific'n Argillic Alunitic Propylitic
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 190 +/- 7 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Alunite

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Irregular
DIMENSION: 1000 x 1000 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The Alberts Hump prospect consists of an irregularly-shaped 1 square kilometre alteration zone (Assessment Report 15735).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 200 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite
Andesitic Crystal Tuff
Andesitic Crystal Lapilli Tuff
Tuff Breccia
Flow

HOSTROCK COMMENTS: The date is the oldest for the Metsantan Member of the Toodoggone Formation, the dominant hostrock of the Alberts Hump (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite
COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1983

COMMODITY

GRADE

Silver

3.7500

Grams per tonne

COMMENTS: Silver values are a weighted average value over the 1-metre interval from 15 to 16 metres in drillhole A82-11.

REFERENCE: Assessment Report 11157.

CAPSULE GEOLOGY

The Alberts Hump prospect consists of a large irregularly-shaped zone, roughly 1 square kilometre, of intensive and extensive clay and quartz alteration (Assessment Report 11157). The prospect is located 500 metres due east of the summit of Alberts Hump, south of Abesti Creek, and 3.2 kilometres west of the AL (Bonanza) occurrence (094E 079) (Assessment Report 11157). Smithers is located 300 kilometres to the south. The occurrence lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The Alberts Hump prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it. The Alberts Hump prospect is underlain by a thick succession of primarily andesitic crystal and crystal lapilli tuff, tuff breccia, flows and associated hypabyssal phases (Assessment Report 11157). For a more detailed account of the local geology refer to the AL (Bonanza) occurrence (094E 079).

Numerous zones of intensive and extensive clay and quartz alteration occur in a 10 square kilometre area that, roughly is bounded by Alberts Hump, Tuff Peak and Metsantan Mountain. In these areas, the altered assemblages are most prevalent in flows of the Metsantan Member, but transcends the contact and extends into underlying ash-flow tuffs of the Adoogacho Member near Alberts Hump. All the altered zones are related to and centred on faults. The alteration assemblages are typically zoned outward from a central core of microcrystalline silica, minor clay minerals and alunite, with or without pyrite, and trace anatase. Irregular cavities and narrow open fractures are lined with quartz druse and interlocking tabular barite crystals occur in massive zones of microcrystalline silica. Outward there is a transition to annular zones of predominantly dickite, nacrite, quartz and sodium-rich alunite, comprising argillic alteration. These argillic zones in turn grade outward into broad peripheral zones of propylitic alteration with chlorite, epidote, and carbonate replacing plagioclase and mafic phenocrysts and the matrix of rocks. Pyrite is widespread in concentrations up to 5 per cent (Bulletin 86).

The Alberts Hump prospect consists of one of these such alteration zones. In 1982, two drillholes by Kidd Creek Mines intersected a hypabyssal intrusion at depth with moderate pyrite concentrations. Assay results from these two drillholes did not yield any anomalous gold, but did show weak to moderate silver anomalies. A 1-metre interval from drillhole A82-11 analysed an average weighted value of 3.75 grams per tonne silver from 15 to 16 metres (Assessment Report 11157).

Geochronological studies using alunite from the alteration zone at the Alberts Hump prospect yielded an age determination of

CAPSULE GEOLOGY

190 +/- 7 Ma (Bulletin 86) and is considered a minimum age of alteration and mineralization.

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1987-C328-C346; 1988-C185-C194
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291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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17655
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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER July 12,26, Aug.2, Sept.20, 1984; October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #145,#147,#183,#192, 1984; #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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Falconbridge File

DATE CODED: 1985/09/13
DATE REVISED: 1992/10/27

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 086**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOOSEHORN**, MOOSE, CASSIDY NO. 1 GRP.,
GWP 30, GWP, GWP 27-28,
GWP 40, GWP 42, BEAR,
DOUG, ROUND MOUNTAIN, R.M. FRACTION,
JIM

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 19 52 N
LONGITUDE: 127 04 52 W
ELEVATION: 1250 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The 3 to 5 metre wide Moosehorn vein of the West zone crops out in the west wall of Moosehorn canyon, approximately 7.5 kilometres northwest of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 15469).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6355873
EASTING: 615522

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Acanthite Silver
ASSOCIATED: Pyrite Quartz Chalcedony Amethyst
ALTERATION: Silica Albite Alunite Kaolinite Chlorite
Sericite

COMMENTS: A date from the Cliff Creek zone of the Lawyers mine (094E 066) (Bulletin 86).

ALTERATION TYPE: Silicific'n Albitic Alunitic Propylitic Sericitic

MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Irregular
DIMENSION: 270 x 75 Metres STRIKE/DIP: 150/80W TREND/PLUNGE:

COMMENTS: An alteration zone, part of a broad hydrothermal alteration zone, is exposed in the Moosehorn canyon; quartz stockwork strikes 150 degrees and dips 80 degrees.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Porphyritic Trachyte Flow
Trachyte
Porphyritic Andesite Flow
Andesite
Greywacke
Latite Lava Flow
Lahar
Pyroclastic
Lapilli Ash Tuff
Lapilli Block Tuff

HOSTROCK COMMENTS: Volcanics are assigned to the Metsantan and Attycelley members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Silver	58.2000	Grams per tonne
Gold	0.9900	Grams per tonne

COMMENTS: Grades are the weighted average over 9.0 metres true width from drillhole 88-12 over the interval 71.0 to 82.0 metres.

REFERENCE: Assessment Report 18847.

CAPSULE GEOLOGY

The Moosehorn prospect is located approximately 7.5 kilometres northwest of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. The prospect lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Moosehorn prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Hostrocks of the Moosehorn prospect are propylitized porphyritic trachyte to andesite flows and tuffs, part of a larger package of Toodoggone volcanics assigned to the Metsantan and Attycelley members. Lithologies of the Metsantan Member include mostly latite lava flows with interflow lahar, and mixed epiclastic and pyroclastic rocks. The overlying lithologies of the Attycelley Member consist of lapilli-ash and block tuffs, interspersed ash and lava flows, and interbedded epiclastic rocks.

The Moosehorn prospect is exposed in the walls of the Moosehorn canyon over a north-south distance of 900 metres. The Moosehorn alteration zone, about 270 metres long by 75 metres wide, is part of a broad band of hydrothermally altered volcanic rocks along the Attorney fault system. The zone is characterized by quartz stockworks, up to 70 per cent potassium feldspar and 0.1 per cent disseminated pyrite, chalcedonic, amethystine and vuggy quartz and quartz banding and lies within a broad zone of argillic, silica and feldspar-altered porphyritic trachyandesite, striking 150 degrees and dipping 80 degrees west. Two distinct vein systems occur in a broad zone of alteration (the East and West zones). The vein systems are about 130 metres apart.

In 1986, detailed sampling, hand trenching, and 12 diamond-drill holes in this zone did not identify a continuous zone of mineralization. Some anomalous gold and silver values were obtained from analyses from the Moosehorn vein (West zone) on the west side of the Moosehorn canyon and in the Amethyst trench (East zone) on the east side of the canyon.

The West zone, consisting of two or more parallel quartz veins 10 to 30 metres apart, are enclosed between two trachyte flows. A 25 metre sequence of varicoloured greywackes overlies the flows but is unmineralized. The principal vein, the Moosehorn vein, strikes about 330 degrees and dips 80 degrees west. It is 3 to 6 metres wide with silicification extending up to 10 metres into host wallrock. Alteration varies from propylitic to partial replacement by potassium feldspar. Up to 0.1 per cent fine-grained pyrite occurs in alteration zones.

The main vein of the East zone does not crop out and is only known from intercepts in drillholes 87-5 and 88-12. The zone of quartz veining in drillhole 87-5 is about 15 metres wide and in drillhole 88-12 about 25 metres wide. The zone has been traced over a north-south length of 375 metres. In 1989, five holes were drilled to search for further mineralization on the Moosehorn East zone. Drillhole 89-6 intersected the East vein at 70 metres depth, confirming its extension along a north-northwesterly strike. The true vertical extent of this zone remains unknown (Forster, 1984).

The main ore minerals are acanthite and native silver, which

CAPSULE GEOLOGY

generally occur as fine disseminations in quartz. Gangue minerals include amethystine, white and chalcedonic quartz, calcite, specular hematite, pyrite with lesser amounts of chlorite, kaolinite, albite and adularia (Forster, 1984). Quartz veining and stockwork with pyrite has an apparent thickness of 55 metres and a width of 50 metres. Veins show well developed banding with a consistent paragenetic sequence, and at least five stages silicification and brecciation (Forster, 1984). Drillholes 89-1, 3 and 6 display strong alteration with some mineralization. From 3.6 to 20 metres, drill core from hole 89-1 is strongly feldspathized with stockworks of quartz veins with pyrite. Drillhole 89-3 is strongly silicified and has stockworks of grey quartz veins with about 1 per cent pyrite over the 8.9 metre interval from 39.0 to 47.9 metres depth. Silicification is the main expression of hydrothermal alteration (Forster, 1984). The thickest interval of silicification was intersected in drillhole 89-6. A heavy clay fault gouge was intercepted from 64.5 to 67.2 metres, below which a 56.6-metre interval of silicified and veined (10 to 50 per cent) hostrock with about 1 per cent pyrite was intercepted. Mineralization is terminated on a post-mineralization fault near the bottom of drill hole 89-3. Subaerial red lapilli tuff are downfaulted against the mineralized zone in this drillhole.

Alteration consists of potassium feldspar replacing hostrocks and sericite replacing potassium feldspar. The zone of alteration widens at depth, from 35 metres at 1200 metres to 60 metres at 1140 metres.

Three zones of anomalous gold and silver were intersected in drillhole 87-5, two in drillhole 88-12, and one in 89-6. The intervals (in metres) and corresponding anomalous values (in grams per tonne) are tabulated as follows (Assessment Report 18847).

Drillhole	Interval	True Width	Au	Ag
87-5	45.0- 49.0	2.0	0.885	68.9
	57.0- 61.0	1.9	0.430	23.5
	63.0- 64.0	0.8	1.520	30.4
88-12	65.0- 69.0	3.2	0.800	14.0
	71.0- 82.0	9.0	0.990	58.2
89-6	122.0-123.8	1.8	0.630	66.3

The highest grade samples were obtained from finely banded, grey chalcedonic quartz veinlets with within highly fractured trachyte flow (Forster, 1984).

Several other quartz veins occur in the hangingwall and west of the main vein, 15 to 100 metres on the Moosehorn East zone. They are 0.7 to 2.8 metres wide.

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 W MINER April, 1982
 N MINER Sept.23, 1982; Sept.23, 1985; June 16; Oct.13, 1986
 N MINER MAG March 1988, p. 1
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 IPDM Nov/Dec 1983; Sept. 1985
 NAGMIN Nov.8, 1985
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 Mineralization, Toodoggone River Area, North-Central British

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 813
REPORT: RGEN0100

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DATE CODED: 1985/09/13
DATE REVISED: 1992/03/20

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 087**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT GRAVES, GRAVES, GRAVES 1,
GRAVES 1-2, GWP ZONE, UPPER GWP ZONE,
LOWER GWP ZONE**

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6361442
EASTING: 621899

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:
LATITUDE: 57 22 46 N
LONGITUDE: 126 58 21 W
ELEVATION: 1875 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: The location of Trench 3 on the Upper GWP zone, located on the eastern side of Mount Graves, 2.75 kilometres south-southeast of Toodoggone Lake and 14 kilometres north of the Shasta occurrence (094E 050) (Assessment Report 19767). Smithers is 290 kilometres to the south.

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Gold Silver Acanthite Pyrite Galena
Sphalerite Tetrahedrite
COMMENTS: Galena, sphalerite and tetrahedrite are minor (Forster, 1984).
ASSOCIATED: Quartz Amethyst Chalcedony Calcite Siderite
Hematite Barite Albite
COMMENTS: Albite is minor (Forster, 1984).
ALTERATION: Silica Quartz Calcite Pyrite Alunite
Jarosite Chlorite Epidote
COMMENTS: Iron, manganese oxides, hematite, magnetite, carbonate and sericite are also present (Forster, 1984). The prospect is classified as an adularia-sericite type epithermal occurrence (Bulletin 86).
ALTERATION TYPE: Silicific'n Argillic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Breccia Disseminated
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 125 x 35 Metres STRIKE/DIP: /60E TREND/PLUNGE:
COMMENTS: The main mineralization is contained within a wedge-shaped silicified zone 5 to 35 metres wide and dipping 55 to 65 degrees northeast (Forster, 1984).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Unnamed/Unknown Formation	

LITHOLOGY: Andesite Flow
Andesite
Rhyolite Dike
Andesite Breccia
Pyroxene Andesite Flow
Greywacke
Hornblende Porphyritic Andesitic Flow
Siltstone
Quartz Monzonite Dike
Quartz Feldspar Rhyolitic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Channel
 COMMODITY

YEAR: 1988

COMMODITY	GRADE	
Silver	461.6000	Grams per tonne
Gold	3.0000	Grams per tonne
Lead	1.4500	Per cent
Zinc	3.3800	Per cent

COMMENTS: Sample L-341 from the north end of Trench 5 on the Upper zone.
 REFERENCE: Assessment Report 17326.

CAPSULE GEOLOGY

The Mount Graves prospect is located on the eastern side of Mount Graves, 2.75 kilometres south-southeast of Toodoggone Lake and 14 kilometres north of the Shasta occurrence (094E 050) (Assessment Report 19767). Smithers is 290 kilometres to the south.

The Mount Graves prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Volcanics and volcanoclastics of the Jurassic Hazelton Group are hostrocks of the Mount Graves prospect and surrounding area. These rocks form the eastern limb of a north-northwest trending faulted anticline. Regionally, these rocks have been subdivided into four informal units (Forster, 1984), which at the Mount Graves prospect, dip 50 to 80 degrees to the northeast. Welded and partially welded andesite pumice breccia, overlain by grey, green to orange hornblende porphyritic andesitic flows and pyroxene andesite flows; lesser thin discontinuous lenses of greywacke and laminated siltstone comprise lithologies of the Hazelton Group. Quartz monzonite dikes are found in the faulted core of the regional anticline and along northeast and east-striking faults. A series of quartz feldspar porphyry rhyolitic dikes, striking northwesterly and dipping steeply, occur subparallel to bedding.

Propylitic alteration is pervasive in all units (Forster, 1984). Mafic phenocrysts are altered to chlorite and epidote with hematite and magnetite inclusions or rims. Plagioclase crystals are replaced or rimmed with epidote, chlorite and carbonate. Groundmass is altered to epidote, chlorite, carbonate, sericite and pyrite. Silicification varies from hairline fractures of quartz and calcite to complete quartz flooding along faults and fractures. Pyrite is commonly associated with quartz veining. Weathering products of pyrite include iron oxides, jarosite and manganese oxides along fault and fracture zones. Stockwork and breccia zones consist of quartz, amethystine quartz, chalcedony, calcite, siderite, hematite and barite.

The Mount Graves prospect is composed of two separate but probably related showings; the Upper and Lower GWP zones. These two zones form a wedge-shaped silicified zone 5 to 35 metres wide dipping 55 to 65 degrees to the northeast, in andesite flows.

Forster (1984) has distinguished five stages of mineralization and brecciation. Mineralization within these five stages includes fine grained native gold, native silver, acanthite, pyrite and minor galena, sphalerite and tetrahedrite which occur within stockwork zones consisting of amethystine, white and chalcedonic quartz, calcite, hematite, barite and minor albite. Thin sections have revealed that gold is associated with at least two stages of mineralization; as intergrowths with pyrite or associated with native silver and acanthite.

The Lower zone is hosted in a steeply dipping andesite flow, forming the hangingwall of a 30 metre wide rhyolite dike. The zone is composed of up to 3 per cent fine to medium grained, disseminated pyrite and trace galena. Limonite, jarosite and alunite are present on surface. Mineralization and alteration appear to be controlled by

CAPSULE GEOLOGY

faulting and fracturing subparallel to bedding and do not persist along strike. A little brecciation was noted.

Approximately 125 metres southwest, the Upper zone is a steeply northwesterly dipping, right-lateral fault zone, striking 030 degrees. The zone is at least 30 metres wide. The zone is interbraided with highly variable, multistage silicification, brecciation and mineralization. Pyrite, galena, sphalerite and tetrahedrite are found as blebs, stringers and disseminations in breccia openings. Similar mineralization and alteration were found under 3 metres cover in Trench 4, indicating a probable extension to the southwest.

A total of 28 rock chip and channel samples were taken from the Upper and Lower GWP zones, during property exploration in 1987. The best assay results were from Trench 3 of the Upper zone. Results from sample L-341 were 3.0 grams per tonne gold, 461.6 grams per tonne silver, 1.45 per cent lead and 3.38 per cent zinc (Assessment Report 17326). Sample L-351, from the other end of the trench, analysed 2.1 grams per tonne gold, 503.1 grams per tonne silver, 0.39 per cent lead and 0.24 per cent zinc (Assessment Report 17326). The best results from the Lower zone were from Sample A-665. They were 1.4 grams per tonne gold, 562.8 grams per tonne silver, 0.07 per cent lead and 0.01 per cent zinc (Assessment Report 17326). Resampling of Trench 3 in 1989 also yielded anomalous gold, silver, lead and zinc (Assessment Report 19767).

Several other areas of anomalous precious and base metals have been found around the Mount Graves prospect. Two have been explored in more detail and are referred to as the Yellow Rose occurrence (094E 203) and the Orange Rose occurrence (094E 204). Other areas of potential include the Vole Peak area where chip samples from a trench have analysed 29.4 grams per tonne silver and 0.20 gram per tonne gold (Assessment Report 19767). Two other potential areas worth mention are the Lake fault zone and the East Ridge zone, both yielding anomalous silver (Assessment Report 19767).

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W MINER April, 1982
N MINER Sept.23, 1982; Oct.13, 1986
N MINER MAG March 1988, p. 1
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DATE CODED: 1985/09/13
DATE REVISED: 1992/11/19

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 088**

NATIONAL MINERAL INVENTORY:

NAME(S): **NUB 2**, NUB MTN GROUP, NUB,
NUB MTN 1-5, FINE, FINE 1-4

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E07E
BC MAP:

LATITUDE: 57 16 05 N
LONGITUDE: 126 43 09 W
ELEVATION: 1880 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of samples SC-45-80-1, 5, 6 and 9, from a zone of quartz vein, breccia and stockwork hosted in Toodoggone volcanics (Assessment Report 9747). The Nub 2 prospect is located 11.5 kilometres south-southwest of Bend Mountain and 5.5 kilometres northwest of Budd Lake, west of the Finlay River. Smithers is 280 kilometres to the south.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6349529
EASTING: 637543

COMMODITIES: Gold Silver Zinc Copper Lead

MINERALS

SIGNIFICANT: Sphalerite Chalcopyrite Galena Pyrite
COMMENTS: Bornite is rare.
ASSOCIATED: Quartz Barite Calcite Epidote Chlorite
ALTERATION: Specularite
Epidote Chlorite Calcite K-Feldspar Zeolite
Specularite Magnetite Limonite

COMMENTS: Barite is possibly strontianite (Assessment Report 9747). The prospect has been classified as an adularia-sericite type epithermal occurrence (Bulletin 86). Manganese oxides, pyrite, quartz, sericite and kaolinite are also present.

ALTERATION TYPE: Propylitic Potassic Zeolitic Hematite Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Stockwork Massive
CLASSIFICATION: Epithermal
SHAPE: Irregular
DIMENSION: 12 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The largest sulphide vein is approximately 12 metres long by 10 to 30 centimetres wide (Assessment Report 9747).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Black Lake Suite
Lower Jurassic			

LITHOLOGY: Crystal Tuff
Lapilli Tuff
Crystal Lapilli Tuff
Volcaniclastic
Andesite
Altered Intrusive Rock
Granodiorite
Quartz Monzonite
Biotite Hornblende Granodiorite
Plagioclase Feldspar Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the east-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab

YEAR: 1981

COMMODITY	GRADE	
Silver	6.0000	Grams per tonne
Gold	7.9000	Grams per tonne
Copper	0.4400	Per cent
Lead	0.0800	Per cent
Zinc	3.5000	Per cent

COMMENTS: Gold and silver are from sample CC-18-81-2, and base metal values are from sample SC-19-81-5.
 REFERENCE: Assessment Report 9747.

CAPSULE GEOLOGY

The Nub 2 prospect is located 11.5 kilometres south-southwest of Bend Mountain and 5.5 kilometres northwest of Budd Lake, west of the Finlay River. Smithers is 280 kilometres to the south.

The Nub 2 prospect area is underlain by volcanics and derived sediments of the Lower Jurassic Toodoggone Formation (Hazelton Group). These are intruded by multiphase granodiorite and quartz monzonite plutons of the Early Jurassic Black Lake Suite. Upper Triassic Takla Group volcanics consist of green to grey plagioclase and pyroxene porphyry andesite flows, subaqueous tuffs, greywacke and conglomerate. Toodoggone volcanics are divided into quartz-bearing and non-quartz bearing units. The former contains 2 to 20 per cent quartz phenocrysts and is more common than the latter. Both contain 10 to 35 per cent plagioclase and rare potassium feldspar phenocrysts in unwelded and welded crystal tuffs and crystal lapilli tuffs, volcanoclastics and rare pyroclastic breccias. A large multiphase pluton is exposed east of the Nub 2 prospect, composed of biotite hornblende granodiorite cut by plagioclase feldspar porphyry quartz monzonite. The rocks are highly fractured due to faulting and the intrusion of plutons. The dominant trend of faulting is 150 and 120 degrees. Small monzonite stocks and dikes are common.

Propylitic alteration is ubiquitous in the area surrounding the Nub 2 prospect and consists of chlorite, epidote, calcite and pyrite. Exceptions are in areas of intense hematization. Potassic alteration occurs in fractured volcanics immediately adjacent to intrusions. Takla Group volcanics tend to be skarn altered with magnetite, actinolite, epidote and pyrrhotite. Extensive areas of volcanics have been pyrite altered, subsequent leaching resulting in pronounced gossans. Quartz-sericite-pyrite, zeolite and argillic (kaolinite) alteration occur along fault structures.

Quartz vein breccias and stockwork occur within Toodoggone crystal to lapilli tuffs and altered intrusive rocks. Quartz is massive to cockscomb-textured and contain disseminated pyrite, galena, chalcopryrite, sphalerite, and rarely bornite. Gangue minerals include calcite, epidote, chlorite, barite, specularite and manganese oxides. Gold and silver values are associated with both sulphide-bearing and nonsulphide-bearing veins and are extremely erratic.

The Nub 2 prospect consists of a zone of mineralized quartz and massive sulphide veins, hosted within a pronounced gossan within Toodoggone volcanics and east of a major north-northwest striking fault. Chalcopryrite, galena, sphalerite and pyrite comprise the mineralogy. The largest of a few sulphide veins observed from this zone is exposed for roughly 12 metres length and is 10 to 30 centimetres wide. Assay values from this vein (sample SC-19-81-5) were 0.60 gram per tonne gold, 64.0 grams per tonne silver, 3.5 per cent zinc, 0.44 per cent copper and 0.08 per cent lead (Assessment Report 9747). Sample CC-18-81-2, taken from a quartz vein with galena and sphalerite 1 kilometre further north, yielded 7.9 grams per tonne gold, 6.0 grams per tonne silver, 3.5 per cent zinc, 0.44 per cent copper and 0.08 per cent lead (Assessment Report 9747).

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 1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
 1987-C328-C346; 1988-C185-C194
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 pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
 *291-293; 1985, pp. 299-300; *1986, pp. 167-174; 1987, pp. 111,
 114-115; 1989, pp. 409-415; 1991, pp. 207-216
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
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N MINER MAG p. 1, March 1988
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/09/13
DATE REVISED: 1992/11/23

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 089**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUN**, SUN 2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 21 50 N
LONGITUDE: 126 54 13 W
ELEVATION: 1560 Metres

NORTHING: 6359836
EASTING: 626094

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample S-2, a 2-metre chip sample from volcanics near reported galena and chalcopyrite mineralization (Assessment Report 12830). The Sun showing is located 5.0 kilometres south-southeast of Toodoggone Lake and 4.5 kilometres southeast of the Mount Graves occurrence (094E 087). Smithers is 290 kilometres to the south.

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz Carbonate Barite
ALTERATION: Chlorite Silica Sericite
ALTERATION TYPE: Propylitic Silicific'n Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazleton	Toodoggone	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Porphyritic Andesite Breccia
Andesite
Conglomerate
Syenite
Syeno Monzonite
Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the east-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1984
SAMPLE TYPE: Chip	
COMMODITY	GRADE
Silver	24.1000 Grams per tonne
Gold	0.3000 Grams per tonne

COMMENTS: Sample S-2, a 2-metre chip sample.
REFERENCE: Assessment Report 12830.

CAPSULE GEOLOGY

The Sun showing is located 5.0 kilometres south-southeast of Toodoggone Lake and 4.5 kilometres southeast of the Mount Graves occurrence (094E 087). Smithers is 290 kilometres to the south. The Sun showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake

CAPSULE GEOLOGY

Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The most common rock type observed in the Sun showing area is a grey-green porphyritic andesite breccia which contains fragments up to 30 centimetres. The andesite is generally fresh to moderately chloritized and locally weakly to moderately silicified. Weak sericite alteration was also observed in one locality. These rocks have been intruded by small irregular bodies of syenite, syenomonzonite and monzonite. The rocks are generally weakly fractured with a strike of 338 degrees and a dip of 40 degrees southwest. Quartz and quartz-barite veins are erratically distributed throughout the area with no preferred orientation being observed.

Pyrite, up to 5 per cent by volume, with minor chalcopyrite, galena and sphalerite are associated with quartz +/- carbonate veins within andesitic breccia and conglomerate. Anomalous gold and silver have been located. Sample S-2, a 2-metre chip sample taken in 1984, analysed 0.3 gram per tonne gold and 24.1 grams per tonne silver (Assessment Report 12830).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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DATE CODED: 1985/09/13
DATE REVISED: 1992/11/24

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 090**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAR**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E12E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 34 35 N
LONGITUDE: 127 31 04 W
ELEVATION: 1830 Metres

NORTHING: 6382518
EASTING: 588641

LOCATION ACCURACY: Within 500M

COMMENTS: The approximate location of the secondmost northerly of four mineralized quartz veins on the Dar claim (Assessment Report 11150). The showing is located 12.5 kilometres northwest of the Alberta Hump occurrence (094E 085) and 8.5 kilometres northeast of the confluence of Adoogacho Creek with the Stikine River (Assessment Report 11150). Smithers is 310 kilometres to the south.

COMMODITIES: Silver Gold Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite

ASSOCIATED: Quartz

ALTERATION: K-Feldspar Silica

COMMENTS: The showing has been classified as an adularia-sericite type epithermal occurrence (Bulletin 86).

ALTERATION TYPE: Potassic Silicific'n

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated

CLASSIFICATION: Epithermal

SHAPE: Irregular

DIMENSION: 5 x 1 Metres STRIKE/DIP: 058/

TREND/PLUNGE:

COMMENTS: The quartz veins strike 058 degrees and dip steeply. All four quartz veins are less than 1 metre wide and the largest is exposed for a strike length of 5 metres (Assessment Report 11150).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIIC AGE: 204 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

LITHOLOGY: Feldspar Porphyry Tuff
Trachydacite
Porphyry Tuff
K-Feldspar Altered Tuff
Trachydacite Ash Flow Tuff
Lapilli Tuff
Volcanic Sandstone
Conglomerate

HOSTROCK COMMENTS: The date is the oldest age of the Adoogacho Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the northwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1983

COMMODITY	GRADE	
Silver	5.7000	Grams per tonne
Gold	0.6700	Grams per tonne
Copper	0.1280	Per cent
Lead	0.1620	Per cent
Zinc	0.0980	Per cent

COMMENTS: Results are from three chip samples taken from the secondmost northerly quartz vein on the Dar claims.

REFERENCE: Assessment Report 11150.

CAPSULE GEOLOGY

The Dar showing, consisting of one of four mineralized quartz veins with silicified wallrocks, is located 12.5 kilometres northwest of the Alberts Hump occurrence (094E 085), and 8.5 kilometres northeast of the confluence of Adoogacho Creek with the Stikine River (Assessment Report 11150). Smithers is 310 kilometres to the south.

The Dar showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Regional mapping has indicated that the Dar showing is underlain by grey and maroon feldspar porphyry tuffs of the Adoogacho Member of the Toodoggone Formation. On a regional scale, the Adoogacho Member is described as consisting of trachydacite ash flow tuffs, lapilli and finer tuffs, volcanic sandstone and conglomerate, and subvolcanic plugs (Bulletin 86).

On a property scale, the Adoogacho Member has been subdivided into four lithologies; grey porphyry tuffs, maroon porphyry tuffs, quartz vein and potassium feldspar altered tuffs adjacent to quartz veins (Assessment Report 11150). The units are flat lying and are conformable with one another.

Silicification is commonly evident in tuffs adjacent to quartz veins. Four quartz veins have been identified on the Dar claim. The quartz veins strike 058 degrees and are steeply dipping. All four quartz veins are less than 1 metre wide and the largest is exposed for a strike length of 5 metres. Minor galena, sphalerite and chalcopryrite occur erratically within quartz veins which are occasionally vuggy. Alteration consists of a small (less than 1 metre) potassium feldspar envelope around quartz veins.

Ten rock chip samples were taken from these veins and associated altered tuffs. The best values, from three chip samples across the same vein, are 5.7 grams per tonne silver, 0.67 gram per tonne gold, 0.128 per cent copper, 0.162 per cent lead and 0.098 per cent copper (Assessment Report 11150).

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1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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Mineralization, Toodoggone River Area, North-Central British
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/09/13
DATE REVISED: 1992/12/09

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 091**

NATIONAL MINERAL INVENTORY: 094E6 Au4

NAME(S): **AL (THESIS II/III)**, AL/BONANZA, THESIS III,
THESIS II, HUMP 81 GROUP, RIDGE 81 GROUP,
SESAME 82 GROUP, FIJI 83 GROUP, HUMP 84 GROUP,
HYUK 84 GROUP, HUMP 86 GROUP, BONANZA 86 GROUP,
AL 1-8, BERT, ERNIE,
ERIC

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 28 04 N
LONGITUDE: 127 23 08 W
ELEVATION: 1660 Metres
LOCATION ACCURACY: Within 500M

Open Pit

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6370609
EASTING: 596835

COMMENTS: The location given is for the AL (Thesis III) zone, located 2 kilometres east-southeast from the summit of Alberts Hump, south of Abesti Creek, and 1.75 kilometres south-southwest from the AL (Bonanza) occurrence (094E 079) (Assessment Report 17655).

COMMODITIES: Gold Copper Lead

MINERALS

SIGNIFICANT: Gold Chalcopyrite Galena
COMMENTS: Trace chalcopyrite and galena is reported at the Thesis II zone.
ASSOCIATED: Quartz Barite Hematite Limonite Pyrite

ALTERATION: Silica Clay Limonite
COMMENTS: Argon-argon age on sericite from the AL (Bonanza) (094E 079) is circa 196 Ma and potassium-argon on sericite from the AL (BV) (094E 099) is 152 Ma. All are acid-sulphate type epithermal occurrences (Bulletin 86).

ALTERATION TYPE: Silicific'n Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Disseminated
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Irregular

MODIFIER: Faulted Fractured

DIMENSION: 300 x 100 x 20 Metres STRIKE/DIP:

COMMENTS: The dimensions given are for the Thesis III structure. The Thesis II structure is 150 metres long by 50 metres wide (Assessment Report 15735).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toodoggone

ISOTOPIC AGE: 204, 200 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

LITHOLOGY: Hornblende Feldspar Andesite Tuff
Porphyritic Andesite
Trachydacite
Trachyandesite
Trachydacite Ash Flow Tuff
Lapilli Tuff
Trachyandesite Flow
Lahar
Conglomerate
Argillaceous Limestone

HOSTROCK COMMENTS: The dates are the oldest ages for the Aduogacho and Metsantan members, the dominant hostrocks (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

PHYSIOGRAPHIC AREA: Spatsizi Plateau

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: THESIS III

REPORT ON: Y

CATEGORY: Combined
QUANTITY: 121551 Tonnes
COMMODITY: _____

YEAR: 1985

GRADE: _____
8.5000 Grams per tonne

COMMENTS: All categories, undiluted.

REFERENCE: Property File - Energex Minerals Ltd. Annual Report 1986.

CAPSULE GEOLOGY

The AL (Thesis II/III) occurrence is located 2.60 kilometres east-southeast of the summit of Alberts Hump, south of Abesti Creek, and 800 metres south of the AL (Bonanza) occurrence (094E 079), 700 metres due north of the AL (BV) occurrence (094E 099) (Assessment Report 15735).

The AL (Thesis II/III) occurrence is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Aadoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Aadoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Aadoogacho Member and is also in fault contact with it. For a more detailed account of the local geology and alteration refer to the AL (Bonanza) occurrence (094E 079).

In 1986, Energex processed 209 tonnes of ore (through a 5.5-tonne pilot mill) from the Theses III zone, result in in 71,694 grams of gold.

In 1991 Cheni Gold Mines Inc. mined approximately 60,000 tonnes from the AL deposit and milled it at Lawyers (094E 066).

The AL (Thesis II/III) occurrence is hosted by a fault controlled, complex alteration system comprised of at least three distinct "core" zones of intense silicification separated by and surrounded by haloes of intense argillic alteration developed in hornblende feldspar porphyritic andesite tuff. The AL (Thesis III) alteration system has been explored along 300 metres of strike and is at least 100 metres wide near its centre point. A northwest trending system of faults forming a zone over 100 metres wide in areas of apparent dilation, appears to control both the AL (Thesis III) system and the AL (Thesis II) system centred 350 metres to the southeast. Other zones to the northwest including the AL (Bingo) and AL (BBX) zones of the AL (BBX-Bingo) occurrence (094E 193) are thought to be genetically related to this fault system.

The central silicified A zone is flanked by a roughly linear B zone to the southwest and a roughly circular to elliptical C zone to the northeast. The A zone consists of 7 to 30 metres of argillic alteration (less than 5 per cent limonite along fractures) flanking an intensely fractured, locally intensely brecciated, (cemented with quartz-barite) intensely silicified zone. The central area is quite massive with little interbedded argillized material; averaging 20 metres true thickness to roughly 50 metres depth. All three zones, at surface, narrow rapidly to linear zones to the northwest. The internal structure is very complex; faulting along north, northeast and southeast trends is evident within the A zone. Slickensides within the core indicate left-lateral movement, often with a gentle south to southwest plunge. The lack of large offsets in the flanking B zone suggest that the A zone was the focus of most post-ore structural failure and the apparent concentration of higher gold values, brecciation and veining also suggests that pre and syn-ore hydrothermal activity was confined to this section. The structure of

CAPSULE GEOLOGY

the poorly exposed C zone is also highly complex. Along strike to the northwest and southeast, the thick central silicified mass appears to split at depth into 2 or 3 silicified bands 5 to 7 metres thick, separated by clay or clay-silica bands of roughly equivalent thickness.

Moderate to high grade native gold mineralization is directly associated with barite and is hosted by intensely silicified, brecciated and microfractured rock with a characteristic porous, vuggy texture; the result of corroded, clay-altered plagioclase phenocrysts. The vugs are commonly partially filled or lined with barite crystals. Some coarse gold, up to 2 millimetres in diameter, occur as dendritic or mossy crystals growing on barite or lying on quartz-barite crystal boundaries. Most of the gold, however, is in the order of 10-100 microns in diameter. Surface mineralogy is dominantly comprised of quartz and barite. Trace amounts of pyrite, hematite or limonite are also present.

Indicated ore reserves (all categories, undiluted) are 121,551 tonnes grading 8.50 grams per tonne gold (Property File - Energex Minerals Ltd. Annual Report 1986). 5.5-tonne pilot mill) from the Theses III zone, resulting in 71,694 grams of gold. In 1991 Chenl Gold Mines Inc. mined approximately 60,000 tonnes from the Al deposit and milled it at Lawyers (094E 066).

The AL (Thesis II) occurrence lies to the southeast of the AL (Thesis III) and is considered to be controlled by the same structure. On surface, the AL (Thesis II) occurrence consists of a central core of quartz-limonite-hematite breccia which splays to the northwest. The silicified core is flanked by intensely argillized porphyritic andesite. The exposed zone is 150 metres long and has a maximum width of 50 metres. Barite is present but not abundant at surface and in drill core. Higher gold values are associated with hematite and limonite fracture fillings and breccia matrix. The silicified, brecciated core of the occurrence has a vertical to steep southwest dip with a southeast trend. Trace chalcopyrite and galena have been observed. Gold grades and mineralized widths in drillholes steadily increase to the southeast; the southeasternmost drillhole intersected 10.1 metres (true width) grading 4.38 grams per tonne gold (Assessment Report 15735).

AGC Americas Gold Corp. and Antares Mining and Exploration Corporation conducted exploration drilling in 1997 on the Thesis zone. AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

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- GSC OF 306; 483
- GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
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MIN REV September/October, 1982; July/August, 1986
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DATE CODED: 1985/09/13
DATE REVISED: 1992/10/26

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 092**

NATIONAL MINERAL INVENTORY:

NAME(S): **T-BILL**, WILLIAM'S GOLD, BILL,
BILL 1-3, T-BIRD, T-BIRD 1-8

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E13W
BC MAP:
LATITUDE: 57 46 46 N
LONGITUDE: 127 46 20 W
ELEVATION: 1875 Metres

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6404817
EASTING: 573016

LOCATION ACCURACY: Within 500M
COMMENTS: The centre of a 300 by 300 metre area covering mineralized quartz-carbonate veins intersected in drillholes 83-1, 2, 6 and 84-2, 5, 7, 8. The Bill prospect is located 5 kilometres west of Park Creek and 14.5 kilometres north-northwest of Spruce Hill (Assessment Report 12559). Dease Lake is 135 kilometres to the northwest.

COMMODITIES: Gold Copper Zinc

MINERALS

SIGNIFICANT: Gold Arsenopyrite Pyrite Chalcopyrite Sphalerite
COMMENTS: Visible gold is found in most samples with greater than 10 grams per tonne gold; chalcopyrite and sphalerite are minor (Assessment Report 12559).

ASSOCIATED: Quartz Carbonate
ALTERATION: Carbonate Sericite Chlorite Silica
COMMENTS: At least three episodes of crystalline quartz-carbonate veinlets are evident, two of which are mineralized with arsenopyrite and pyrite (Assessment Report 12559).

ALTERATION TYPE: Carbonate Sericitic Chloritic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Mesothermal
TYPE: I01 Au-quartz veins
DIMENSION:
COMMENTS: Quartz-arsenopyrite +/- carbonate veins strike 090 to 110 degrees and dip 70 degrees north to 70 degrees south (Assessment Report 12559).
STRIKE/DIP: 100/90 TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Paleozoic Unnamed/Unknown Group Unnamed/Unknown Formation

LITHOLOGY: Quartz Muscovite Carbonate Schist
Graphitic Schist
Marble
Chlorite Feldspar Schist
Chlorite Schist
Chlorite Quartz Banded Schist
Calcareous Chlorite Schist
Basic Dike

HOSTROCK COMMENTS: The age of alteration is thought to be Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: ZONE 83-2 REPORT ON: N
CATEGORY: Assay/analysis YEAR: 2001
SAMPLE TYPE: Drill Core
COMMODITY: Gold GRADE: 35.0000 Grams per tonne
COMMENTS: Over 2.0 metres, in veins of Bill prospect (DDH 83-6).
REFERENCE: EM Exploration 2001, pages 89-96.

CAPSULE GEOLOGY

mesothermal and intrusion related, characterize the Bill property. The Bill property is the mesothermal vein portion where gold rich quartz arsenopyrite veins are broadly coincident with carbonate muscovite alteration of the Asitka Host. The Park prospect is less studied but shows low grade copper and gold mineralization in hornfelsed silicified and pyritized volcanics, adjacent to an "early Jurassic" quartz monzodiorite. The alteration in the Bill group is thought to be Early Cretaceous (EMPR Exploration 2001, pages 89-96).1

In 1983, a drill program at the Bill prospect covered an area 640 by 500 metres with significant intersections in 3 of 6 drillholes. The drill program consisted of 1174.71 metres in 6 drillholes. The best intersection of these 3 drillholes was 34.97 grams per tonne gold over the 2-metre interval from 52 to 54 metres in drillhole 83-2 (Assessment Report 11493). Further drilling was conducted in 1984 with more encouraging results. A total of 1848.3 metres in 9 holes were drilled. Drillhole P84-8 yielded 24.8 grams per tonne gold over a 2-metre interval from 31.9 to 33.9 metres (Assessment Report 12559). Visible gold was reported in extensive quartz veining with arsenopyrite and pyrite in fault gouge.

Stikine Gold Corp. carried out an induced polarization survey in 2002.

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- EMPR MAP 65 (1989)
- EMPR OF 1990-12
- GSC BULL 12; 270; 376
- GSC MAP 14-1973
- GSC OF 306; 483
- GSC P 71-1A, pp. 23-26; 72-1A, pp. 26-29; pp. 29-32; 74-1A, pp. 13-16; 76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246; 80-1A, p. 348; *80-1B, pp. 207-211; 83-1A, pp. 221-227; 84-1A, pp. 105-108
- PR REL Rimfire Minerals Corp., July 5, Sept.5, 2002; Jan.24, 2003
- WWW <http://www.infomine.com/index/properties/BILL.html>;
- <http://www.rimfire.bc.ca>

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/13

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 093**

NATIONAL MINERAL INVENTORY: 094E6 Au5

NAME(S): **METS**, A, FOOTWALL,
N75

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 26 20 N
LONGITUDE: 127 20 02 W
ELEVATION: 1870 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6367468
EASTING: 600012

COMMENTS: The A zone is located 4.5 kilometres east-northeast from Metsantan Lake and 4.1 kilometres southeast of the AL (BV) occurrence (094E 099) (Assessment Report 16692). Smithers is located 300 kilometres to the south.

COMMODITIES: Gold Silver Copper Lead

MINERALS

SIGNIFICANT: Gold Electrum Argentite Tetrahedrite Pyrite
Galena

COMMENTS: Native gold is the primary ore mineral; the other minerals are rare.

ASSOCIATED: Quartz Barite Carbonate

COMMENTS: Quartz-carbonate gangue in the Footwall zone.

ALTERATION: Clay Kaolinite Dickite Sericite Silica
Chlorite Epidote

COMMENTS: A date on adularia from the Metsantan occurrence (094E 064) (Fieldwork 1986, pages 167-174).

ALTERATION TYPE: Argillic Silicific'n Propylitic

MINERALIZATION AGE: Middle Jurassic

ISOTOPIC AGE: 168 +/- 6 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Vein Breccia

CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Cylindrical

MODIFIER: Faulted

DIMENSION: 140 x 75 x 6 Metres STRIKE/DIP: 340/70W

TREND/PLUNGE:

COMMENTS: The A zone; an ore shoot has a gentle northwest plunge.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toodoggone

ISOTOPIC AGE: 200 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Dacite
Tuff
Lapilli Tuff
K-Feldspar Andesite

HOSTROCK COMMENTS: The date is the oldest age of the Metsantan Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: METS

REPORT ON: Y

CATEGORY: Combined YEAR: 1992
QUANTITY: 54068 Tonnes

COMMODITY GRADE
Gold 11.6600 Grams per tonne

COMMENTS: Assessment of previous drilling outlined a cut and diluted mineable (probable and possible) reserve.

REFERENCE: Northern Miner - September 21, 1992.

CAPSULE GEOLOGY

The Mets developed prospect consists of a tabular core of silicified rock in three separate but genetically linked zones; the A zone (and extension), the Footwall zone and the 400 South zone. The occurrence is located 4.5 kilometres east-northeast from Metsantan Lake and 4.1 kilometres southeast of the AL (BV) occurrence (094E 099) (Assessment Report 16692). Smithers is located 300 kilometres to the south. The occurrence lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The Mets developed prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Mets property is underlain by northwest trending volcanic units of the Metsantan Member, and crosscut by major and minor fault systems. The main northwest fault is possibly correlative with the Cliff Creek structure at the Lawyers mine (094E 066), 14 kilometres to the southeast. A ring and radial fracture system converges on nearby Metsantan Mountain peak. The oldest unit of the Adoogacho Member is composed of potassium feldspar (K-spar) andesite characterized by an aphanitic to finely crystalline groundmass containing 1-4 millimetre potassium feldspar phenocrysts. This unit forms the footwall of the A zone. Overlying the K-spar andesite and forming the hangingwall of the A zone, is a porphyritic dacite of the Metsantan Member. The dacite consists mainly of clear and colourless to white, 1-2 millimetre quartz phenocrysts in an aphanitic pink plagioclase groundmass. A red tuff is often intercalated with the dacite and appears as an aphanitic to very fine grained, well-sorted unit. It is composed mainly of very fine-sized strands of quartz and plagioclase. Generally, the tuff is massive but in rare instances, it exhibits slight graded bedding with tops to the west. A lapilli tuff unit has also been recognized and consists of a fine-grained groundmass of quartz and plagioclase with elongate and block-shaped lithic fragments 5-10 millimetres in size (Assessment Report 16692).

Alteration at the Mets deposit is typical of epithermal environments; an extensive outer propylitic (epidote, chlorite, rare pyrite), adjacent advanced argillic (sericite, kaolinite, dickite), and inner silicic (quartz +/- barite) zones on both the hangingwall and footwall. Propylitic alteration is the most common alteration on the property and proximal to the A zone. Hangingwall dacites exhibit moderate to intense alteration; intensity increases upwards towards the breccia system. The propylitic envelope consists of an assemblage of chlorite and epidote and to a minor extent, rare calcite and pyrite. Bleaching and silicification of hangingwall dacites becomes evident within 5 to 20 metres of the breccia system after which alteration shifts to argillic, evidenced by the deterioration of the plagioclase component of the dacite. Adjacent to the breccia zone is an interval of advanced argillic alteration comprising an assemblage of clay minerals, primarily dickite and kaolinite and sericite. Argillic alteration occurs in both the hangingwall and footwall side of the breccia system but primarily within the footwall side where the alteration envelope can range from 1 to 40 metres in thickness.

Alteration of the footwall K-spar andesite is minimal and is restricted to argillic alteration of brecciated andesites and to a lesser extent, propylitic alteration.

Silicification of the breccia material is extensive and can be found throughout the breccia or at times as a silicified wall, bounding both the footwall and hangingwall sides of the breccia system. Generally, it is within the silicified intervals where the better grade gold mineralization occurs.

Locally a quartz-barite breccia occurs near the vertical contact between the K-spar andesite and porphyritic dacite and is the host

CAPSULE GEOLOGY

for gold mineralization in the A zone. The breccia generally occurs at the andesite/dacite contact but in some instances will cross both units. The breccia consists of microbrecciated to coarse (10 centimetre) fragments of quartz, barite and porphyritic dacite. Fragments have been rebrecciated and cemented with quartz and barite; at least three brecciation cycles have been noted. Quartz character ranges from chalcedonic to coarsely crystalline, white to grey in colour. Barite usually occurs as white to pink, fine-bladed crystals. Native gold is the primary ore mineral present with rare occurrences of electrum, argentite, tetrahedrite, pyrite and galena. Gold occurs as free grains and flakes (0.005-2 millimetres) adjacent to fragments of quartz and barite within the breccia system.

The A zone has a strike length of 140 metres, a true thickness of 6 to 10 metres and vertical extent of up to 75 metres. It strikes 340 degrees with 70 to 85 degree dips to the west. An ore shoot within the A zone has a gentle northwest plunge. Gold mineralization occurs as free blebs and grains ranging from 0.005 to 2.000 millimetres. Gold is generally found along quartz and barite fragment margins. Sulphide mineralization is practically nonexistent (Assessment Report 16692).

The most apparent geological feature which controls gold grades within the A zone is attitude and thickness of the breccia. Steep, thin breccias generally are of economic grade; when breccia orientation flattens, such as at depth, ore grade drops off rapidly. At the north end of the zone, a crosscutting vertical fault (N75 fault), terminates ore-grade material.

Localized flat, vertical and block faulting provides for minor displacements of the A zone. Striking skew to the A zone at 290 degrees is the Red fault with approximately 35 metres of left lateral displacement. The A zone is truncated by the N75 fault, a vertical graben structure striking 050 degrees and dipping 80 degrees south with the north block downdropped with up to 100 to 110 metres of vertical displacement.

Deep drilling (1987) north of the N75 fault intersected a quartz breccia (N75 zone or A Extension) at a vertical hangingwall-footwall contact. The breccia occurs over a narrow width (4 metres) with gold grades ranging from 0.85 gram per tonne across 4 metres to 22.834 grams per tonne across 7.1 metres (Assessment Report 16692). The N75 zone suggests vertical movement on the N75 fault of approximately 100 metres.

Trenching has exposed the Footwall zone, a quartz-carbonate breccia situated within footwall K-spar andesites. The footwall breccia has been exposed at three points over a 260 metre strike length. The breccia has a large carbonate content and the metal ratios are Ag/Au = 2:1 or greater versus Au/Ag = 10:1 or greater for the A zone. A 1-metre channel sample assayed 19.81 grams per tonne gold and 127.86 grams per tonne silver (Assessment Report 16692). The Footwall zone is interpreted to strike 340 degrees with an indeterminate dip. Widths of the breccia pinches and swells with a maximum width on surface of 4 metres. A drill intersection assayed 19.29 grams per tonne gold over 0.7 metre (Assessment Report 16692).

Drilling (1987) has also intersected the 400 South zone, a narrow quartz breccia hosting gold mineralization at the K-spar andesite/dacite contact. One intersection, in drillhole M87-42, graded 4.11 grams per tonne over 1.6 metres (Assessment Report 16692). Drillhole M87-31 intersected 1.0 metres grading 8.03 grams per tonne gold (Assessment Report 16692).

Measured geological reserves for the A zone are 143,321 tonnes grading 11.31 grams per tonne gold (Assessment Report 16692). Inferred reserves for the combined Footwall and N75 zones are 317,485 tonnes grading 11.31 grams per tonne gold (Property File - M.E.G. Talk, November 18, 1987).

A more recent evaluation of reserves indicate roughly half of the previously reported reserves. Re-assessment of previous drilling outlined a cut and diluted mineable (probable and possible) reserve of 54,068 tonnes grading 11.66 grams per tonne gold (Northern Miner - September 1992).

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MIN REV September/October, 1982; July/August, 1986
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DATE CODED: 1985/10/28
DATE REVISED: 1992/10/06

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094E 094**

NATIONAL MINERAL INVENTORY: 094E2 Cu8

NAME(S): **KEMESS SOUTH**, RON, SOUTH KEMESS

STATUS: Producer Open Pit

MINING DIVISION: Omineca

REGIONS: British Columbia

NTS MAP: 094E02E 094E02W

UTM ZONE: 09 (NAD 83)

BC MAP:

LATITUDE: 57 00 21 N

NORTHING: 6320284

LONGITUDE: 126 45 03 W

EASTING: 636596

ELEVATION: 1350 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Kemess South deposit, 750 metres west of Kemess Creek and 4 kilometres south of Duncan Lake, 265 kilometres north of Smithers. The Omineca Mine Road passes 5 kilometres west of the property. See also Kemess North (094E 021).

COMMODITIES: Copper Gold Molybdenum Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Chalcocite Copper Molybdenite

Magnetite

COMMENTS: Molybdenite and magnetite are minor. Supergene minerals include chalcocite, native copper, cuprite and malachite (Bulletin 86).

ASSOCIATED: Quartz Calcite

ALTERATION: Sericite Clay Quartz Calcite Carbonate

Chlorite Hematite Gypsum

COMMENTS: Also zeolites, cuprite and malachite.

ALTERATION TYPE: Sericitic Propylitic Carbonate Oxidation

MINERALIZATION AGE: Unknown

ISOTOPIC AGE: 199.6 +/- .6 DATING METHOD: Uranium/Lead MATERIAL DATED: Zircon

DEPOSIT

CHARACTER: Disseminated Stockwork Vein

CLASSIFICATION: Porphyry

TYPE: L04 Porphyry Cu ± Mo ± Au

DIMENSION: 1700 x 650 x 290 Metres STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: Zone of porphyry mineralization. Date from mineralized dacite porphyry.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Triassic

Takla

Unnamed/Unknown Formation

Lower Jurassic

Maple Leaf Pluton

ISOTOPIC AGE: 199.6 +/- .6 Ma

DATING METHOD: Uranium/Lead

MATERIAL DATED: Zircon

LITHOLOGY: Quartz Monzonite
Basalt Andesite Flow
Andesite
Basalt
Granodiorite
Quartz Diorite
Syenite
Chert
Cherty Tuff
Argillite

HOSTROCK COMMENTS: Pers. Comm. Friedman to Diakow in 1998-1, p. 8a-12. Fieldwork 1997, p. 8a-12.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

Plutonic Rocks
RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Greenschist
Zeolite

INVENTORY

ORE ZONE: KEMESS SOUTH

REPORT ON: Y

CATEGORY: Indicated
QUANTITY: 47949193 Tonnes
COMMODITY
Gold 0.4810 Grams per tonne
Copper 0.1680 Per cent

YEAR: 2001

REFERENCE: WWW <http://www.northgateexploration.ca>

ORE ZONE: KEMESS SOUTH

REPORT ON: Y

CATEGORY: Proven
QUANTITY: 109360244 Tonnes
COMMODITY
Gold 0.7120 Grams per tonne
Copper 0.2340 Per cent

YEAR: 2001

COMMENTS: Reserves as of December 31, 2001.
REFERENCE: WWW <http://www.northgateexploration.ca>

CAPSULE GEOLOGY

Discovered in 1983, extensive diamond drilling up until 1991 outlined the present Kemess South deposit. The deposit is not exposed at surface. This blind discovery was made by drill testing geochemical and geophysical anomalies. Prospectors were originally drawn to the region because of the prominent, rust coloured ridges that occur immediately to the north, and in part comprise the Kemess North deposit (094E 021). The Kemess South deposit is hosted by the Early Jurassic Maple Leaf intrusion, a gently inclined sheet of quartz monzodiorite. The ore body measures 1700 metres long by 650 metres wide and ranges from 100 metres to over 290 metres thick. A blanket of copper-enriched supergene mineralization, containing native copper, overlies hypogene ore and comprises 20 per cent of the deposit.

The Kemess property is located in the southern part of the Toodoggone mining district in north-central British Columbia. The Toodoggone district lies within the eastern margin of the Intermontane Belt and is underlain by a northwesterly trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions covering an area of 90 by 25 kilometres. The basement rocks are Proterozoic metasedimentary equivalents of the Hadrynian Ingenika Group. These rocks are unconformably overlain by volcanic and sedimentary units of the Permian Asitka Group which are in turn overlain by Upper Triassic basaltic to andesitic flows, volcanoclastics and minor limestone of the Takla Group. Volcanoclastic rocks of the Lower Jurassic Hazelton Group and rhyolitic to dacitic flows, intrusions and volcanoclastics of the Lower Jurassic Toodoggone Formation (Hazelton Group) overlie the Takla Group. Further to the west, nonmarine sediments of the Cretaceous Sustut Group overlie the volcanic strata and form the western margin of the district.

The Early Jurassic Black Lake Suite of quartz monzonitic to granodioritic composition have intruded the older strata in the central and eastern parts of the region, and form the eastern margin of the Toodoggone district. Within the district, syenomonzonitic and quartz feldspar porphyritic dikes may be feeders to the Toodoggone Formation.

Bedrock is poorly exposed in the Kemess South occurrence area. Drilling and mapping show the geology to consist of Takla Group volcanics and sediments which have been intruded by Lower-Middle Jurassic quartz monzonite. Other intrusive compositions include granodiorite, quartz diorite and some syenite. Most of the volcanic rocks intersected in drilling are presumed to have been flows, with compositions in the basalt to andesite range. Their fine grain size and a strong alteration overprint obscure their primary mineralogy. A few crystal tuff units and lapillistones exist. They are not volumetrically significant and in most instances are associated with sedimentary units. Sedimentary rocks intersected in drillholes include chert, cherty tuff, argillite and graphitic argillite. The sediments are interlayered with the volcanic flows.

Most of the deformation at Kemess South has taken the form of brittle fracturing; on a large scale as faulting and a smaller scale as jointing. The myriad fractures, faults and breccia zones are difficult to correlate from drillhole to drillhole. The one exception to this, easily correlated because of the lithologic markers, is a fault that is consistently present at the base of the quartz monzonite. Several generations of veins and stockworks, plus many later unhealed joints and fractures, evidence a long history of fracturing.

With the possible exception of cherts and argillites in the Takla strata, all of the rocks have been altered. There is a complex

CAPSULE GEOLOGY

overprinting of alteration assemblages and are listed in approximate time sequence starting with the earliest: 1) sericitization of plagioclase - most of the plagioclase in the quartz monzonite has been altered to an aggregate of fine-grained sericite and clays; 2) quartz veinlets - quartz is fracture filling, forming veinlets and veins in a stockwork that make up anywhere from 5-30 per cent of the rock over tens of metres and as much as 70 per cent of the rock over a few metres. The most common veinlets are a few millimetres to a few centimetres thick; 3) chlorite - much of the fault gouge noted throughout drill core has a chloritic component; 4) calcite veining - calcite veinlets are widespread throughout, cutting many other alteration assemblages. Quartz-calcite veins are common, but most are quartz veins, fractured and invaded by calcite. Other minerals sometimes associated with calcite are chlorite and hematite; 5) carbonate veining - carbonate veining is used here to describe veins containing a carbonate mineral that is not calcite. In most cases it is probably iron carbonate. Like the calcite veins, carbonate veins are late; 6) gypsum - late veinlets of gypsum, though not volumetrically important, are present throughout the lithologic assemblage; and 7) zeolites - some of the late veinlets contain what are probably zeolite minerals. Like gypsum, they are widespread but not volumetrically important.

Mineralization at Kemess South is hosted within a relatively flat-lying body of quartz monzonite and extends a short distance into Takla volcanics and sediments in the footwall. A veneer of overburden from 3-24 metres thick and averaging 10 metres, covers the quartz monzonite. The sulphide assemblage consists of pyrite and chalcopryrite disseminated in both quartz veins and the altered host quartz monzonite. Molybdenite and magnetite are minor. Supergene minerals include chalcocite, native copper, cuprite and malachite (Bulletin 86). The zone of porphyry mineralization is blanket-shaped, measuring 1700 metres in an east-west direction, 650 metres north-south, and ranging in vertical thickness from 100 to greater than 290 metres. The zone lies very near surface in the eastern half of the deposit while its depth increases toward the west, lying up to 182 metres below the surface. The north, south and eastern limits of the deposit have been delineated, while the zone remains open to the west (Northern Miner - January 20, 1992).

Later work suggests that the rhyolites and certs are part of the Pennsylvanian to Permian Asitka Group and that the augite and plagioclase phyric basalts are part of the Triassic Takla Group. These

have been intruded by the Maple Leaf Pluton, and brought to surface to be affected with by supergene enrichment. Later dacitic ash flow tuffs, lithic tuffs, and epiclastic rocks of the Toodoggone Formation of the lower Hazelton Group overlie the deposit.

The deposit itself is hosted in part in the rhyolite and mineralization consists of pyrite, magnetite, chalcopryrite and bornite with minor amounts of molybdenite and traces of gold. They occur on fractures and in veins and interstitial to feldspars. The most important alteration is sericite which may form up to 25 per cent of the rock. A less abundant alteration is a pink potash feldspar alteration which forms selvages on quartz and/or sulphide veins and stockworks. Below this type of alteration is found, near the lower edge of the pluton, a hematite, clay, carbonate, and silica rich zone. The supergene zone, on the other hand, is above these alteration

zones and it is increasingly developed as small pinprick flakes of native copper that become leaf like and eventually coalesce to form sheets of native copper at the top of the zone, in red oxidized clay rich rock. At the top is the "leach cap" which is enriched in gold and contains very little copper (EM Fieldwork 1998, page 103-114).

Mineable "reserves" are estimated at 45.5 million tonnes grading 0.20 per cent copper and 0.75 gram per tonne gold (supergene) and 155 million tonnes grading 0.23 per cent copper and 0.59 gram per tonne gold (hypogene) for an overall reserve of 200.4 million tonnes grading 0.22 per cent copper and 0.63 gram per tonne gold and 0.008 per cent molybdenum. Mill throughput is proposed at 45,000 tonnes per day, providing a mine life in excess of 16 years (Information Circular 1996-1, page 11; 1997-1, page 13).

A project approval certificate was awarded in April 1996, with production scheduled to commence in April 1998. Construction of an airstrip and site facilities commenced in mid-1996.

Kemess South is owned and operated by Kemess Mines Inc., a wholly owned subsidiary of Royal Oak Mines Inc.

During the pre-production stripping phase of the project, which started in July of 1997, over 8,000,000 tonnes of overburden and waste were removed from the open pit. From the start of operations

CAPSULE GEOLOGY

in mid-May to August 11, 1998, some 2,450,000 tonnes of hypogene ore at a grade of 0.22 per cent copper and 0.55 grams per tonne gold has been mined. From May to the end of September, about 1.8 million tonnes of ore were processed, producing 1,191,300 grams of gold and 5,080,000 kilograms of copper. The average strip ratio for the project is estimated to be about 1.18 to 1 over the estimated 16 year life of the mine.

Production in 1998 totalled 7,482,000 tonnes yielding 9,690,000 kilograms of copper and 2,393,000 grams of gold.

In October 1999, Northgate Exploration Ltd. agreed to take over the Kemess Mine. Resources estimated by Royal Oak as of January 1, 1999 were 192,918,000 tonnes, grading 0.22 per cent copper and 0.63 grams per tonne gold (Information Circular 2000-1, page 6). Four different ore types (leached cap supergene, transitional and hypogene) are mined separately from a starter pit.

Reserves as of December 31, 2000 were proven 145,911,266 tonnes grading 0.653 grams gold, 0.235 grams copper and measured 56,107,795 tonnes grading 0.39 grams gold and 0.161 grams copper (Northgate Exploration Newsrelease, January 22, 2000).

Reserves as of December 31, 2001 were proven 132,587,789 tonnes grading 0.704 gram gold and 0.233 per cent copper and indicated 56,107,795 tonnes grading 0.39 gram gold and 0.161 per cent copper (Northgate website).

Northgate had a record annual production in 2002 of 8,780,511 grams of gold and 33,061,225 kilograms of copper from 4,489,862 tonnes of ore milled.

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IPDM Nov/Dec 1983
MIN REV September/October, 1984; July/August, 1986; Winter 1996/97,

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Feb.17, Mar.23, June 29, Aug.10, 1992; *Jan.4, 1993; Mar.11,
May 6,27, 1996; Feb.10,17, May 12, July 7, Dec.29, 1997; Mar.23,
Apr.6, May 4,25, Aug.24, Oct.19, Nov.23, 1998; Jan.4, Jan.18,
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Vancouver Sun, Apr.10, 1999

DATE CODED: 1986/06/02
DATE REVISED: 1997/03/26

CODED BY: AFW
REVISED BY: GP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 095**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAWN, SHASTEX, SHASTEX 1,
PARADISE, PARADISE 1**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 13 36 N
LONGITUDE: 126 57 17 W
ELEVATION: 1700 Metres

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6344471
EASTING: 623479

LOCATION ACCURACY: Within 500M
COMMENTS: Drillhole CR88-2 intersected a silicified breccia zone 55 metres long by 10 to 20 metres wide by 4 metres thick, approximately 3.3 kilometres north-northwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 18354).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica Sericite Quartz Pyrite Chlorite
Hematite
ALTERATION TYPE: Silicific'n Sericitic Chloritic Hematite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Breccia Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 55 x 20 x 4 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A quartz stockwork breccia zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Lapilli Tuff
Pyroxene Feldspar Phyric Basalt
Lahar
Siltstone
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Silver 2.6500 Grams per tonne
Gold 1.0100 Grams per tonne
COMMENTS: Average grade from drillhole CR88-2 over a 7-metre interval.
REFERENCE: Assessment Report 18354.

CAPSULE GEOLOGY

The Dawn showing is located approximately 3.3 kilometres north-northwest of Drybrough Peak, some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest

CAPSULE GEOLOGY

by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Dawn showing is underlain predominantly by Takla Group pyroxene feldspar phyric basalt flows and lesser lapilli tuffs. The rocks are weakly to moderately chloritized and locally weakly hematite altered. Moderate to strong patches of quartz-sericite-pyrite are associated with moderate to strong quartz-carbonate stockworks and silica flooding. Numerous quartz veins up to 30 centimetres wide are present. The Toodoggone volcanics are exposed as a fault-bound block west of the Dawn showing and consist of lahar and lesser siltstone and conglomerate.

Drillhole CR88-02 was drilled during an exploration program in 1988 to test the depth of a 10 to 20-metre wide, 55-metre long, northwest-trending zone of moderate to strong quartz stockwork breccia and quartz-sericite-pyrite alteration exposed by trench TC88-6. This hole intersected heterolithic lapilli tuff in fault contact with coarse dark grey-green pyroxene feldspar phyric basalt flows, both of the Takla Group. A 4-metre wide zone of intensely silicified, pyritic and weakly brecciated rock was intersected at 21.7 metres depth. Hangingwall alteration consists of 16 metres of blocky, strong sericite-pyrite alteration. The siliceous zone is truncated at depth by a 10-centimetre wide fault. The siliceous zone dips 30 to 40 degrees.

Assay results from drill core samples of this silicified zone were 2.65 grams per tonne silver and 1.01 grams per tonne gold over 7 metres (Assessment Report 18354). The best results from this zone were from a 1-metre interval (sample CR82217227-14), and were 4.0 grams per tonne silver and 2.91 grams per tonne gold (Assessment Report 18354).

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- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1985/08/30
DATE REVISED: 1992/02/24

CODED BY: AFW
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 096**

NATIONAL MINERAL INVENTORY:

NAME(S): **BELLE SOUTH**, BELLE, BELLE 1-2,
BELLE 4

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 24 41 N
LONGITUDE: 127 08 01 W
ELEVATION: 1630 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of discovery samples B-TM-14 to 18, taken from a southeastern exposure of an argillic alteration zone 200 metres long by 2 metres wide and striking 300 degrees. The prospect is 2.75 kilometres east-northeast of Kadah Lake and 5.5 kilometres northwest of the confluence of the McClair Creek and Toadoggone River, in the north-central part of the Toadoggone gold camp. Smithers is located 310 kilometres to the south.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6364720
EASTING: 612117

COMMODITIES: Gold Silver Lead

MINERALS

SIGNIFICANT: Pyrite Galena
COMMENTS: A 0.1-metre seam within the argillic zone contains galena and other massive sulphides.

ASSOCIATED: Quartz Calcite Barite Pyrite
COMMENTS: Calcite and quartz veins carry up to 5 per cent disseminated pyrite.

ALTERATION: Clay Silica Epidote Chlorite Hematite

ALTERATION TYPE: Argillic Propylitic Silicific'n

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein Disseminated

CLASSIFICATION: Epithermal

TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Irregular

DIMENSION: 200 x 4 Metres STRIKE/DIP: 300/

COMMENTS: Argillic zone; the structure was seen to be anastomosing in character (Assessment Report 18627).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toadoggone	

ISOTOPIC AGE: 197 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic K-Feldspar Flow
Trachyandesite Flow
Lapilli Tuff
Lahar
Trachyandesite
Andesite
Heterolithic Lapilli Tuff
Block Tuff
Andesite Flow
Dike

HOSTROCK COMMENTS: The date of the McClair Member of the Toadoggone Formation is between 197 and 193.8 Ma, the age of the enclosing stratigraphy (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central part of the Toadoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1988

COMMODITY	GRADE	
Silver	42.8000	Grams per tonne
Gold	6.8200	Grams per tonne

COMMENTS: Sample 22185, a 1-metre chip sample from Trench T-B-88-10.
REFERENCE: Assessment Report 18627.

CAPSULE GEOLOGY

The Belle South prospect is located 2.75 kilometres east-northeast of Kadah Lake and 5.5 kilometres northwest of the confluence of the McClair Creek and Toodoggone River. Smithers is 310 kilometres south. The occurrence lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Belle South prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The rocks surrounding the Belle South prospect consist of fault-bound blocks of the Metsantan and McClair members of the Toodoggone Formation. The Metsantan Member is described as trachyandesite flows with lesser lapilli tuff and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The overlying McClair Member is described as heterogeneous lapilli to block tuff andesite flows and numerous cogenetic dikes and subvolcanic plugs; minor mudstone and conglomerate (Bulletin 86). At the Belle South prospect, the Metsantan Member consists of porphyritic potassium feldspar flows (Assessment Report 18627).

Propylitic alteration (epidote, chlorite) is pervasive and silicification is present near quartz breccias (Assessment Report 18627). Lapilli tuff of the Metsantan Member is primarily silica with hematite stain. Fragments of quartz breccia and tuff along with feldspar and barite crystals bound by a clay matrix compose the coeval lahar. This unit is argillically altered and the intensity increases as the siliceous breccia core is approached.

In 1982, stream sediment anomalies were found south of the Belle South prospect. Subsequently, grab samples B-TM-14 to 18 (Assessment Report 14489) were taken from a southeastern exposure of an argillic alteration zone 200 metres long by 2 metres wide and striking 300 degrees (Assessment Report 18627). Scattered throughout are rare calcite and quartz veins and up to 5 per cent disseminated pyrite; trench T-B-88-03 uncovered a 0.1-metre wide seam of galena and other massive sulphides. The structure was seen to be anastomosing in character (Assessment Report 18627).

Assay results from the five best grab samples taken in 1985 ranged from 9.14 to 107 grams per tonne gold and 30 to 103 grams per tonne silver (Assessment Report 14489). A trenching program in 1988 has yielded anomalous assay results along this structure for 30 metres strike length. The best results were from Trench T-B-88-10, towards the northwestern end of the zone. Sample 22185, a 1-metre chip sample from 20.0 to 21.0 metres analysed 6.82 grams per tonne gold and 42.8 grams per tonne silver (Assessment Report 18627). Trenches T-B-88-1 through to 6 also yielded significant gold and silver assays.

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
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IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
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DATE CODED: 1986/09/22
DATE REVISED: 1992/10/01

CODED BY: AFW
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 097**

NATIONAL MINERAL INVENTORY:

NAME(S): **EDOZADELLE MOUNTAIN**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E05E 094E06W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 22 09 N
LONGITUDE: 127 30 06 W
ELEVATION: 1750 Metres

NORTHING: 6359473
EASTING: 590113

LOCATION ACCURACY: Within 500M

COMMENTS: The location of a radioactive tuff unit in the Lasuli Member of the Brothers Peak Formation. The showing is located 3.0 kilometres west-northwest of Edozadelly Mountain and 8.0 kilometres west-southwest of the confluence of Chapea Creek with the Stikine River (Geological Survey of Canada Paper 81-1A, pages 241-246).

COMMODITIES: Uranium

MINERALS

SIGNIFICANT: Analcime
ALTERATION TYPE: Zeolitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Sedimentary Syngenetic
TYPE: D06 Volcanic-hosted U
DIMENSION: 500 Metres
COMMENTS: Some radioactive zones are 2 to 10 centimetres thick over 500 metres.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Sustut	Brothers Peak	

LITHOLOGY: Ash Tuff
Tuffaceous Mudstone
Siltstone
Arenite
Polymictic Conglomerate

HOSTROCK COMMENTS: Radioactive tuffs and tuffaceous mudstones are part of the Lasuli Member of the Brothers Peak Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
COMMENTS: Sustut Group basinal rocks overlie Stikine Terrane rocks.

PHYSIOGRAPHIC AREA: Spatsizi Plateau
RELATIONSHIP: Syn-mineralization
GRADE: Zeolite

CAPSULE GEOLOGY

The Edozadelly Mountain showing, composed of radioactive materials in a tuff unit of the Lasuli Member, Brothers Peak Formation (Sustut Group), is located 3.0 kilometres west-northwest of Edozadelly Mountain and 8.0 kilometres west-southwest of the confluence of Chapea Creek with the Stikine River (Geological Survey of Canada Paper 81-1A, pages 241-246).

The Edozadelly Mountain showing lies on the eastern edge of the Sustut Basin. It is composed of mid-Cretaceous to latest Cretaceous nonmarine strata of the Sustut Group. The Sustut Basin is a successor basin to the larger Bowser Basin to the west. The Bowser Lake Group consists of Middle Jurassic to mid-Cretaceous marine and nonmarine strata. Both groups and underlying strata of Stikinia were deformed by northeast-verging folds and thrust faults of the Skeena Fold Belt in Late Jurassic (?) to latest Cretaceous or early Tertiary time (Geological Survey of Canada Paper 92-1A, pages 77-84).

Mid-Cretaceous to latest Cretaceous continental clastic sediments of the Sustut Group are subdivided into the Tango Creek and overlying Brothers Peak formations. The Tango Formation is subdivided into two members; the lower Niven Member and the upper Tatlatui Member. The Brothers Peak Formation is subdivided into the lower Lasuli Member and the upper Spatsizi Member.

The lower Lasuli Member is composed of coarse, grey, polymictic conglomerate and arenites, interbedded with grey, green and rarely varicolored ash tuffs and tuffaceous mudstones and siltstones. The tuff units are radioactive with some zones 2 to 10 centimetres thick,

CAPSULE GEOLOGY

over 500 metres strike length, yielding over 0.01 per cent uranium (Geological Survey of Canada Paper 81-1A, page 245).

The lowermost 6 or 7 ash tuff units of the Lasuli Member are anomalously radioactive. These tuffs are generally laminated, greenish grey, porcelaneous and hard, and weather cream to pale brown. The more radioactive tuffs and tuffaceous mudstones are marked by pink layers or mottles. The most radioactive are altered to a bright red, contain coaly fragments, and are within sequences containing white spherules and coalescent spherules of analcime (zeolites).

A sample of the tuff analysed about 0.038 per cent uranium over a 2-centimetre thick layer. Radioactive inspection suggests that all tuffs in the Lasuli Member yield about 0.002 to 0.006 per cent uranium. Uranium mineralization is likely early diagenetic, but essentially syngenetic within waterlain tuffs.

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Bell, R.T. 1985: Overview of Uranium in Volcanic Rocks of the Canadian Cordillera, in IAEA, Vol. ST1/PUB/690 - Uranium in Volcanic Rocks, p. 329

DATE CODED: 1987/08/31
DATE REVISED: 1992/12/20

CODED BY: LDJ
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 098**

NATIONAL MINERAL INVENTORY:

NAME(S): **LAWYERS PASS**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 18 29 N
LONGITUDE: 127 22 06 W
ELEVATION: 1750 Metres

NORTHING: 6352856
EASTING: 598294

LOCATION ACCURACY: Within 500M

COMMENTS: The location of a radioactive tuff unit in the Lasuli Member of the Brothers Peak Formation. The showing is located 8.0 kilometres southeast of Edozadelly Mountain, west of Lawyers Pass and 12.0 kilometres west-southwest of the Lawyers mine (094E 066) (Geological Survey of Canada Paper 81-1A, pages 241-246).

COMMODITIES: Uranium

MINERALS

SIGNIFICANT: Analcime
ALTERATION TYPE: Zeolitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Sedimentary Syngenetic
TYPE: D06 Volcanic-hosted U
DIMENSION: 500 Metres
COMMENTS: Some radioactive zones are 2 to 10 centimetres thick over 500 metres.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Sustut	Brothers Peak	

LITHOLOGY: Ash Tuff
Tuffaceous Mudstone
Siltstone
Arenite
Polymictic Conglomerate

HOSTROCK COMMENTS: Radioactive tuffs and tuffaceous mudstones are part of the Lasuli Member of the Brothers Peak Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
COMMENTS: Sustut Group basinal rocks overlie Stikine Terrane rocks.

PHYSIOGRAPHIC AREA: Spatsizi Plateau
RELATIONSHIP: Syn-mineralization
GRADE: Zeolite

CAPSULE GEOLOGY

The Lawyers Pass showing, composed of radioactive materials in a tuff unit of the Lasuli Member, Brothers Peak Formation (Sustut Group), is located 8.0 kilometres southeast of Edozadelly Mountain, west of Lawyers Pass and 12.0 kilometres west-southwest of the Lawyers mine (094E 066) (Geological Survey of Canada Paper 81-1A, pages 241-246).

The Lawyers Pass showing lies on the eastern edge of the Sustut Basin. It is composed of mid-Cretaceous to latest Cretaceous nonmarine strata of the Sustut Group. The Sustut Basin is a successor basin to the larger Bowser Basin to the west. The Bowser Lake Group consists of Middle Jurassic to mid-Cretaceous marine and nonmarine strata. Both groups and underlying strata of Stikinia were deformed by northeast-verging folds and thrust faults of the Skeena Fold Belt in Late Jurassic (?) to latest Cretaceous or early Tertiary time (Geological Survey of Canada Paper 92-1A, pages 77-84).

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The lower Lasuli Member is composed of coarse, grey, polymictic conglomerate and arenites, interbedded with grey, green and rarely varicolored ash tuffs and tuffaceous mudstones and siltstones. The tuff units are radioactive with some zones 2 to 10 centimetres thick

MINFILE NUMBER: **094E 098**

CAPSULE GEOLOGY

and over 500 metres strike length yielding over 0.01 per cent uranium (Geological Survey of Canada Paper 81-1A, page 245).

The lowermost 6 or 7 ash tuff units of the Lasuli Member are anomalously radioactive. These tuffs are generally laminated, greenish grey, porcelaneous and hard, and weather cream to pale brown. The more radioactive tuffs and tuffaceous mudstones are marked by pink layers or mottles. The most radioactive are altered to a bright red, contain coaly fragments, and is within sequences containing white spherules and coalescent spherules of analcime (zeolites).

A sample of the tuff analysed about 0.038 per cent uranium over a 2-centimetre thick layer. Radioactive inspection suggests that all tuffs in the Lasuli Member yielded about 0.002 to 0.006 per cent uranium. Uranium mineralization is likely early diagenetic, but essentially syngenetic within waterlain tuffs.

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GSC MAP 14-1973
Canadian Mineralogist Vol. 12, pp. 527-541
Bell, R.T., 1985: Overview of Uranium in Volcanic Rocks of the Canadian Cordillera, in IAEA, Vol. ST1/PUB/690 - Uranium in Volcanic Rocks, p. 329

DATE CODED: 1987/08/31
DATE REVISED: 1992/12/20

CODED BY: LDJ
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 099**

NATIONAL MINERAL INVENTORY: 094E6 Au4

NAME(S): **AL (BV)**, BV, BV (BARITE VEIN),
HUMP 81 GROUP, SESAME 82 GROUP, FUJI 83 GROUP,
HUMP 84 GROUP, HYUK 84 GROUP, HUMP 86 GROUP,
BONANZA GROUP, AL, AL 1-8,
BERT, ERNIE, BULL,
BARITE VEIN

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 27 42 N
LONGITUDE: 127 23 05 W
ELEVATION: 1580 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6369930
EASTING: 596901

COMMENTS: The approximate center of the AL(BV) occurrence is located 2.9 kilometres south-southeast from the summit of Alberts Hump, south of Abesti Creek, and 4.5 kilometres north of Metsantan Lake (Assessment Report 17655).

COMMODITIES: Gold Silver Lead Copper

MINERALS

SIGNIFICANT: Gold Galena Chalcopyrite
COMMENTS: Minor galena and chalcopyrite are present.
ASSOCIATED: Barite Quartz Pyrite Chalcedony
ALTERATION: Silica Sericite

COMMENTS: A potassium-argon age date on sericite from the AL (BV) developed prospect (Geological Fieldwork, 1988).

ALTERATION TYPE: Silicific'n Sericitic Leaching
MINERALIZATION AGE: Upper Jurassic
ISOTOPIC AGE: 152 +/- 5 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Sericite

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Bladed
MODIFIER: Faulted Sheared
DIMENSION: 600 x 50 x 10 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The AL (BV) occurrence has been traced by drilling and trenching for 600 metres. The average width is 10 metres. Drilling indicates mineralization persists to 50 metres depth (Assessment Report 15735).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE:	204, 200 +/- 7 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Andesite Flow
Andesite
Siliceous Rock
Trachydacite Ash Flow Tuff
Trachydacite
Lapilli Tuff
Trachyandesite Flow
Lahar
Volcanic Sandstone
Conglomerate

HOSTROCK COMMENTS: The dates given are the oldest ages for the Adoogacho and Metsantan members of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: BV

REPORT ON: Y

CATEGORY: Indicated
QUANTITY: 53000 Tonnes
COMMODITY: _____

YEAR: 1988

Gold GRADE 10.4000 Grams per tonne

REFERENCE: Fieldwork 1988, page 410.

CAPSULE GEOLOGY

The AL (BV) developed prospect is located 2.90 kilometres southeast of the summit of Alberts Hump, south of Abesti Creek, and 2.3 kilometres southwest of the AL (Bonanza) occurrence (094E 079) (Assessment Report 15257). Smithers is located 300 kilometres to the south. The occurrence lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The AL (BV) developed prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it.

See the AL (Bonanza) occurrence (094E 079) for a more detailed geological description.

The AL (BV) developed prospect has been exposed by drilling and trenching over some 600 metres along a northwesterly strike. The west limb of the zone trends west-northwest and is hinged to an eastern limb that trends northwest. The zone is up to 15 metres wide and appears to contain several sub-parallel gold-bearing lenses which strike west-northwest and dip to the north. The structure hosting the AL (BV) developed prospect remains open at both ends. The average width of the mineralized surface exposure is roughly 10 metres, along a 170 metre long section of exposed vein structure. Drilling indicates mineralization persists to at least 50 metres depth. On surface the vein structure branches or is faulted into at least two semi-parallel mineralized zones within a repetitious barite-quartz sequence (Assessment Report 16057).

The AL (BV) occurrence is barite-hosted, but differs from the AL (Thesis III) (094E 091) and the AL (Bonanza) (094E 079) in that high grade mineralization occurs as narrow, discrete barite-quartz-pyrite veins in a silicified andesite flow, with a more continuous strike length. The AL (BV) prospect does not display the lensoidal, advanced argillic alteration, acid-leaching features and porous silicified zones characteristic of an upper level epithermal system, characteristic of other acid-sulphate associated deposits in the area. The mineralization and alteration is more confined and directed by the fault system hosting the occurrence. The veins are commonly brecciated and sheared at depth, and are associated with strong sericitic alteration. The occurrence of minor galena and chalcopryrite, and less pyrite associated with gold mineralization, the higher than average silver content for the area and the presence of chalcedonic quartz veins suggest deeper epithermal emplacement of the AL (BV) mineralization.

Geochronological studies (Fieldwork 1988, pages 409-412) using sericite from the alteration zone at the AL (BV) yielded an age of 152 +/- 5 Ma and is considered a minimum age of alteration and mineralization.

The AL (BV) occurrence contains indicated reserves of 53,000 tonnes grading 10.4 grams per tonne gold (Fieldwork 1988, page 410).

CAPSULE GEOLOGY

Currently, 45,355 tonnes of ore grading 13.3 grams per tonne gold has been mined and stockpiled.

In 1996, AGC Americas Gold Corp. acquired the Al property. In 1997, AGC entered into a joint venture agreement with Antares Mining and Exploration Corporation. AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

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- EMPR PF (CANSUP File, Reconnaissance Geochemical Survey map; (News Report, 12 p., Multinational Resources Inc.; Claims map of the Toodoggone Gold Camp, Duke Minerals Ltd.; Photogeologic Interpretation Map of the Northern Omineca area, Oct. 1964, Canadian Superior Exploration Limited-in 94E General File); News Release, 1986, Multinational Resources Inc.; Annual Report, 1986, Energex Minerals Ltd.; Annual Report, 1986/87, Energex Minerals Ltd.; News Release, (July 15;31) 1986, Energex Minerals Ltd.; 2nd Quarter Report, (Nov.30) 1987, Energex Minerals Ltd.)
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- MIN REV September/October, 1982; July/August, 1986
- N MINER Aug.23, 1984; May 12, June 16, Aug.4, Oct.6,13, 1986; Feb.2, 9, 1987
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DATE CODED: 1989/07/31
DATE REVISED: 1992/10/30

CODED BY: GO
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 100**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL (BLOSS)**, BLOSS, AL 4,
RIDGE 81 GROUP, SESAME 82 GROUP, HYUK 84 GROUP,
BONANZA 86 GROUP, AL, AL 1-8,
BERT, ERNIE, BULL,
HYUK 1-3 FRACTION, NII FRACTION, OSCAR FRACTION

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 27 29 N
LONGITUDE: 127 20 52 W
ELEVATION: 1500 Metres

NORTHING: 6369581
EASTING: 599127

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample G-174 from a tabular core of silicified rock,
located 5.1 kilometres east-southeast from the summit of Alberts
Hump, south of Abesti Creek, and 2.25 kilometres south of the AL (BV)
occurrence (094E 099). Smithers is 300 kilometres south (Assessment
Report 14460).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Silica Barite Hematite Limonite
ALTERATION: Silica Clay Pyrite Hematite Limonite

COMMENTS: Argon-argon age on sericite from the Al (Bonanza) (094E 079) is circa
196 Ma, potassium-argon on sericite from the Al (BV) (094E 099) is 152
Ma and on adularia from Alberts Hump (094E 085) is 190 Ma (Bulletin
86); all are acid-sulphate type epithermal occurrences.

ALTERATION TYPE: Silicific'n Argillic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE:	204, 200 +/- 7 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Trachyandesite Ash Flow Tuff
Lapilli Tuff
Trachyandesite Flow
Lahar
Trachyandesite
Conglomerate
Volcanic Sandstone

HOSTROCK COMMENTS: The dates given are the oldest ages of the Adoogacho and Metsantan
members of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Chip
COMMODITY: Gold GRADE: 1.4000 Grams per tonne
COMMENTS: Sample G-174, a 2.4-metre chip sample.
REFERENCE: Assessment Report 14460.

CAPSULE GEOLOGY

The AL (Bloss) prospect consists of a tabular core of silicified rock, located 5.1 kilometres east-southeast from the summit of Alberts Hump, south of Abesti Creek, and 2.25 kilometres south of the AL (BV) occurrence (094E 099) (Assessment Report 14460). Smithers is located 300 kilometres to the south. The occurrence lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The AL (Bloss) prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachyandesite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it. For a more detailed account of the local geology and alteration refer to the AL (Bonanza) occurrence (094E 079).

The AL (Bloss) prospect consists of a steeply dipping, east-trending core of completely silicified rock apparently flanked by a clay alteration zone. The core has a tabular, vein-like form which outcrops as a resistant spine. The south contact or wall of the siliceous core appears to be a south-dipping fault; the north contact is not exposed. The core zone is well fractured and is locally brecciated. Fractures contain traces of pyrite with abundant limonite and minor hematite. Barite is present but not abundant. The porosity of the rock is low except where (postmineral?) fracturing and brecciation are intense. The zone is open to the east, west and north.

A series of chip samples from trenches yielded a best assay of 1.4 grams per tonne gold across 2.4 metres (sample G-174, Assessment Report 14460). Grab sample 116F, taken in 1982 from this same zone, analysed 2.1 and 9.1 grams per tonne gold (Assessment Report 14460).

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N MINER Dec.24, 1981; July 26, 1984; Feb.21, June 27, July 25, Aug.1, Sept.9, 1985; May 12, June 16, July 28, Aug.4, Sept.15, Oct.6,

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Columbia, Ph.D. Thesis, University of Western Ontario
Falconbridge File

DATE CODED: 1989/01/01
DATE REVISED: 1992/10/30

CODED BY: GO
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 101**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL (PATTI)**, PATTI, NII FRACTION,
HYUK 84 GROUP, AL, AL 4-7,
HYUK 1-3 FRACTION

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6368076
EASTING: 598279

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 26 41 N
LONGITUDE: 127 21 45 W
ELEVATION: 1580 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample G-144, taken from a 350 by 250 metres alteration system, 5.2 kilometres southeast from the summit of Alberts Hump, south of Abesti Creek, and 2.3 kilometres southeast of the AL (BV) (094E 099) occurrence. Smithers is 300 kilometres to the south (Assessment Report 14460).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Silica Barite Limonite Pyrite Hematite
ALTERATION: Silica Clay Limonite

COMMENTS: Argon-argon age on sericite from the Al (Bonanza) (094E 079) is circa 196 Ma, potassium-argon on sericite from the Al (BV) (094E 099) is 152 Ma and on adularia from Alberts Hump (094E 085) is 190 Ma (Bulletin 86); all are acid-sulphate type epithermal occurrences.

ALTERATION TYPE: Silicific'n Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 350 x 250 Metres
COMMENTS: Alteration system (Assessment Report 14460).

STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE:	204, 200 +/- 7 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		

LITHOLOGY: Trachydacite Ash Flow Tuff
Lapilli Tuff
Trachyandesite Flow
Trachyandesite
Lahar
Trachydacite
Conglomerate
Volcanic Sandstone

HOSTROCK COMMENTS: The dates given are the oldest ages of the Adoogacho and Metsantan members of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Chip
COMMODITY: Gold GRADE: 3.7500 Grams per tonne

COMMENTS: Sample G-144, a 15-centimetre chip sample of a barite vein within a silica core.

REFERENCE: Assessment Report 14460.

CAPSULE GEOLOGY

The AL (Patti) prospect is an alteration zone at least 250 metres wide and 350 metres long and may be part of a much larger system. The prospect is located 5.2 kilometres southeast from the summit of Alberts Hump, south of Abesti Creek, and 2.3 kilometres southeast of the AL (BV) (094E 099) occurrence (Assessment Report 14460). Smithers is located 300 kilometres to the south. The occurrence lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The AL (Patti) prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it. For a more detailed account of the local geology and alteration refer to the AL (Bonanza) occurrence (094E 079).

system. The zone consists of two closely spaced, parallel, north trending spines or ridges of completely silicified rock surrounded by a large halo of advanced argillic, argillic-siliceous and rare siliceous-pyritic alteration. The central ridges coalesce on the south end of the zone forming a massive silica outcrop approximately 60 metres wide. The silicified core is typically composed of grey to buff amorphous silica. Vugs lined with tiny quartz crystals are locally common, particularly in the east-central section. Limonite-coated fractures are very common, as are small sections of breccia. The clay-rich rocks enveloping the siliceous core are commonly grey-white to yellow-white, porphyritic and pyritic or hematitic. The primary structural trend of this zone is north; however, superimposed on this dominant trend is a southeast trending pattern of minor faults, "dry" fractures and fracture-hosted barite veinlets.

Gold is apparently closely associated with massive barite in veins and breccias within the siliceous core. It appears that gold was deposited at the same time as barite, possibly during late stage hydrothermal event. Explosive depressurization during this event may have caused fracturing and brecciation noted in the siliceous core with contemporaneous deposition of gold-barite mineralization.

A 15-centimetre chip sample (G-144) of a barite vein within a siliceous core assayed 3.75 grams per tonne gold. A grab sample (G-140) analysed 58.8 grams per tonne gold (Assessment Report 14460).

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- EMPR EXPL 1975-E163-E167; 1976-E175-E177; 1977-E216-E217; 1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345; 1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414; 1987-C328-C346; 1988-A16; C185-C194
- EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982, pp. 125-127; 1983, pp. 137-138, 142-148; *1984, pp. 139-145, 291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; *1988, pp. 409-415; 1989, pp. 409-415; 1991, pp. 207-216
- EMPR BULL *86
- EMPR ASS RPT 4060, 4680, 4681, 8128, 9293, 10226, 10482, 10709, 11157, 12182, 12457, 13198, 13454, 13503, 14459, *14460, 14638, 15735, 16057, 17257, 17655

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
W MINER April, 1982
N MINER Dec.24, 1981; July 26, 1984; Feb.21, June 27, July 25, Aug.1, Sept.9, 1985; May 12, June 16, July 28, Aug.4, Sept.15, Oct.6,13, Nov.10, 1986; Feb.2,9, 1987; June 13, 1988
N MINER MAG March 1987; March 1988, p. 1
GCNL #236, 1981; #243, 1983; #217,#145,#147,#163,#123, 1984; #166, #158,#154,#144,#141,#137,#128,#23, 1985; #211,#217,#148,#206, #162,#125,#35,#54,#22,#165, 1986; #86,#19,#80, 1987; #135,#180, #175,#165, 1988
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NAGMIN Nov.8, 1985
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V STOCKWATCH July 28, Aug.12,26,29, 1987
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle Jurassic Toodoggone Formation, Toodoggone Mining District, British Columbia, Ph.D. Thesis, University of Western Ontario
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DATE CODED: 1989/07/31
DATE REVISED: 1992/10/28

CODED BY: GO
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 102**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL (STEVE'S)**, STEVE'S, AL 6,
RIDGE 81 GROUP, SESAME 82 GROUP, HYUK 84 GROUP,
HUMP 86 GROUP, AL, AL 1-8,
BERT, ERNIE, BULL,
OSCAR FRACTION, HYUK 1-3 FRACTION, NII FRACTION

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 26 59 N
LONGITUDE: 127 20 45 W
ELEVATION: 1635 Metres

NORTHING: 6368657
EASTING: 599266

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample G-126, taken from a large, roughly ovoid alteration system, located 5.6 kilometres southeast from the summit of Alberts Hump, south of Abesti Creek and 3.6 kilometres southeast of the AL (BV) (094E 099). Smithers is 300 kilometres to the south (Assessment Report 14460).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Silica Barite Clay
COMMENTS: Hematite is rare (Assessment Report 14460).
ALTERATION: Silica Clay Limonite Barite Sericite
Hematite

COMMENTS: Argon-argon age on sericite from the AL (Bonanza) (094E 079) is circa 196 Ma, potassium-argon on sericite from the AL (BV) (094E 099) is 152 Ma and on adularia from Alberts Hump (094E 085) is 190 Ma (Bulletin 86); all are acid-sulphate type epithermal occurrences.

ALTERATION TYPE: Silicific'n Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Disseminated
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 400 x 300 Metres STRIKE/DIP:
COMMENTS: A silica and argillic alteration system is roughly ovoid (Assessment Report 14460).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 204, 200 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Trachydacite Ash Flow Tuff
Lapilli Tuff
Trachydacite
Trachyandesite Flow
Trachyandesite
Lahar
Conglomerate
Volcanic Sandstone

HOSTROCK COMMENTS: The dates given are the oldest ages of the Adoogacho and Metsantan members of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1985

COMMODITY

GRADE

Gold

2.0800

Grams per tonne

COMMENTS: Sample G-126, a 1-metre chip sample from a barite-rich breccia zone.
REFERENCE: Assessment Report 14460.

CAPSULE GEOLOGY

The AL (Steve's) prospect is a large, roughly ovoid alteration system approximately 300 metres wide and at least 400 metres long. The prospect is located 5.6 kilometres southeast of the summit of Alberts Hump, south of Abesti Creek, and 3.6 kilometres southeast of the AL (BV) occurrence (094E 099) (Assessment Report 14460). Smithers is located 300 kilometres to the south. The occurrence lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The AL (Steve's) prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it. For a more detailed account of the local geology and alteration refer to the AL (Bonanza) occurrence (094E 079).

The AL (Steve's) prospect consists of a large (400 metres long by 300 metres wide) alteration system, roughly ovoid in shape. The zone has a silicified core with a large envelope of advanced argillic alteration, similar to the AL (Patti) prospect (094E 101). The silicified core comprises three (possibly four) separate siliceous outcrops with different fracture patterns, textures and mineralogy. They are separated by zones of argillic or argillic-silicic alteration. Accessory minerals in the silicified core include limonite, barite and rare hematite, sericite and clays. Barite is common in the southeastern section of the core zone where it occurs as breccia matrix and as massive veins up to 15 centimetres wide.

Sample G-126, a 1.0-metre chip sample from a barite-rich breccia zone near the southeast corner of the prospect, assayed 2.08 grams per tonne gold (Assessment Report 14460).

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1986-A12,A44-A45,C403-C404,C407-C408; 1987-A44,C337
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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-A16,C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; *1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; *1988,
pp. 409-412; 1989, pp. 409-415; 1991, pp. 207-216
EMPR BULL *86
EMPR ASS RPT 4060, 4680, 4681, 8128, 9293, 10226, 10482, 10709,
11157, 12182, 12457, 13198, 13454, 13503, 14459, *14460, 14638,
15735, 16057, 17257, 17655
EMPR MAP 61, (1985)

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EMPR GEOLOGY 1977-1981, pp. 156-161
GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
W MINER April, 1982
N MINER Dec.24, 1981; July 26, 1984; Feb.21, June 27, July 25, Aug.1, Sept.9, 1985; May 12, June 16, July 28, Aug.4, Sept.15, Oct.6,13, Nov.10, 1986; Feb.2,9, 1987; June 13, 1988
N MINER MAG March 1987; March 1988, p. 1
GCNL #236, 1981; #243, 1983; #217,#145,#147,#163,#123, 1984; #166, #158,#154,#144,#141,#137,#128,#23, 1985; #211,#217,#148,#206, #162,#125,#35,#54,#22,#165, 1986; #86,#19,#80, 1987; #135,#180, #175,#165, 1988
IPDM Nov/Dec 1983
NAGMIN Nov.8, 1985
ECON GEOL Vol. 86, pp. 529-554, 1991
V STOCKWATCH July 28, Aug.12,26,29, 1987
MIN REV September/October, 1982; July/August, 1986
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Falconbridge File

DATE CODED: 1989/07/31
DATE REVISED: 1992/10/28

CODED BY: GO
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 103**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL (RING)**, RING, AL4,
RIDGE 81 GROUP, SESAME 82 GROUP, HYUK 84 GROUP,
BONANZA 86 GROUP, AL, AL 1-8,
BERT, ERNIE, BULL,
HYUK 1-3 FRACTION, NII FRACTION, OSCAR FRACTION

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

LATITUDE: 57 27 33 N
LONGITUDE: 127 22 18 W
ELEVATION: 1470 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The AL (Ring) prospect consists of an extensive area of argillic and siliceous alteration 600 metres long and at least 300 metres wide. It is located 3.8 kilometres southeast of the summit of Alberts Hump, south of Abesti Creek, and 900 metres southeast of the AL (BV) occurrence (094E 099). Smithers is 300 kilometres south (Assessment Report 14460).

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

NORTHING: 6369670
EASTING: 597691

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Silica Hematite Barite Pyrite

COMMENTS: Barite is rare.

ALTERATION: Silica Clay Limonite Hematite

COMMENTS: Argon-argon age on sericite from the AL (Bonanza) (094E 079) is circa 196 Ma, potassium-argon on sericite from the AL (BV) (094E 099) is 152 Ma, and on adularia from Alberts Hump (094E 085) is 190 Ma (Bulletin 86); all are acid-sulphate type epithermal occurrences.

ALTERATION TYPE: Silicific'n Argillic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Disseminated

CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 600 x 300 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: Alteration zone (Assessment Report 14460).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 204, 200 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

LITHOLOGY: Trachydacite Ash Flow Tuff
Lapilli Tuff
Trachydacite
Trachyandesite Flow
Trachyandesite
Lahar
Conglomerate
Volcanic Sandstone

HOSTROCK COMMENTS: The dates given are the oldest ages of the Adoogacho and Metsantan members respectively, of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

PHYSIOGRAPHIC AREA: Spatsizi Plateau

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1985

COMMODITY

GRADE

Gold

1.6000

Grams per tonne

COMMENTS: Sample B323 from silicified outcrop exposed in Trench 13.
REFERENCE: Assessment Report 14460.

CAPSULE GEOLOGY

The AL (Ring) showing consists of an extensive area of argillic and siliceous alteration 600 metres long and at least 300 metres wide. The showing is located 3.8 kilometres southeast of the summit of Alberts Hump, south of Abesti Creek, and 900 metres southeast of the AL (BV) occurrence (094E 099) (Assessment Report 14460). Smithers is located 300 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The AL (Ring) showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it. For a more detailed account of the local geology and alteration refer to the AL (Bonanza) occurrence (094E 079).

The AL (Ring) showing comprises an extensive area of argillic to siliceous alteration 600 metres long and at least 300 metres wide. The dominant alteration is silicification and silicification-argillization. There appear to be two fracture trends, southeast and north-northeast. The north-northeast trend is siliceous and is the trend of all primary features using silicified zones as indicators. Typically the silicified zones within the AL (Ring) showing are composed of cryptocrystalline quartz with considerable limonite on fracture planes and as vug fillings. Outcrops are heavily brecciated and fractured. Individual fragments show crude banding. Barite is rare. The southeast trend is argillized and trenching indicates that this alteration is the most important and widespread of the two alteration types. The argillized rocks comprising the bulk of the zone are porphyritic and slightly siliceous. Local sections contain hematite and limonite is abundant.

Gold mineralization is restricted to zones of strong silicification containing little or no clay, typical of other occurrences on the AL property. A grab sample (B323) from silicified outcrop in Trench 13 assayed 1.6 grams per tonne gold (Assessment Report 14460).

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1982-15,336,337; 1983-485; 1984-353-354; 1985-A20-A21,C355;
1986-A12,A44-A45,C403-C404,C407-C408; 1987-A44,C337
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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-A16,C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; *1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; *1988,
pp. 409-412; 1989, pp. 409-415; 1991, pp. 207-216

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*11157, 12182, 12457, 13198, *13454, 13503, 14459, *14460, 14638,
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
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N MINER Dec.24, 1981; July 26, 1984; Feb.21, June 27, July 25, Aug.1,
Sept.9, 1985; May 12, June 16, July 28, Aug.4, Sept.15, Oct.6,13,
Nov.10, 1986; Feb.2,9, 1987; June 13, 1988
N MINER MAG March 1987; March 1988, p. 1
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#158,#154,#144,#141,#137,#128,#23, 1985; #211,#217,#148,#206,
#162,#125,#35,#54,#22,#12(Jan.17),#124(June 27),#130(July 8),
#152(Aug.8),#165(Aug.27),#197(Oct.14),#200(Oct.17), 1986; #86,
#19,#80, 1987; #135,#180,#175,#165, 1988
IPDM Nov/Dec 1983
NAGMIN Nov.8, 1985
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V STOCKWATCH July 28, Aug.12,26,29, 1987
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Falconbridge File

DATE CODED: 1989/07/31
DATE REVISED: 1992/10/28

CODED BY: GO
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 104**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAVER DAM**, GRACE, GRACE 5,
GRACE 1-5, GRACE 1-14, CONCHA,
CONCHA 1-7, ERROR, ERROR 1-8,
JOK, JOK 1-6, FINLAY RIVER,
SKARN, SKARN 1-4, VIP,
VIP 1-40

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 11 17 N
LONGITUDE: 126 49 20 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: A total of 7 drillholes, covering a zone approximately 40 metres wide by 1500 metres long, have intersected two parallel zones of quartz-chalcedony stockwork veins and veinlets, located west of Finlay River and 5.7 kilometres east-southeast of Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 17459).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6340422
EASTING: 631614

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Chalcedony Pyrite
ALTERATION: Sericite Silica Kaolinite Chlorite Epidote
COMMENTS: Breccia clasts are locally kaolinite altered and a peripheral zone of epidote-chlorite alteration surrounds the West zone (Assessment Report 17459).
ALTERATION TYPE: Sericitic Silicific'n Argillic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Breccia Vein
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
MODIFIER: Fractured
DIMENSION: 300 x 25 x 2 Metres STRIKE/DIP: 125/ TREND/PLUNGE:
COMMENTS: The West zone is 200 to 300 metres long, 15 to 25 metres wide and up to 2.58 metres thick (apparent). Both the West and East zones have a strike of 125 degrees (Assessment Report 17459).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Porphyritic Dacitic Pyroclastic
Dacite
Andesitic Flow
Volcanic Tuff
Breccia
Quartz Monzonite
Granodiorite

HOSTROCK COMMENTS: A strong structural break (fault) is central to the mineralization.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite
PHYSIOGRAPHIC AREA: Omineca Mountains
COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: WEST

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Silver	59.0000	Grams per tonne
Gold	0.5300	Grams per tonne

COMMENTS: Sample was taken from a 2.58-metre interval from drillhole 88-12, drilled in the West zone.

REFERENCE: Assessment Report 18313.

CAPSULE GEOLOGY

The Beaver Dam prospect is located west of Finlay River and 5.75 kilometres east-southeast of Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The prospect is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Beaver Dam prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Beaver Dam prospect consists of quartz-chalcedony stockwork vein and breccia systems (West and East zones), 70 metres apart and striking 125 degrees. The Toodoggone Formation country rocks consist of salmon pink-weathered, dark grey, quartz-eye porphyritic dacitic fragmentals. To the southeast, outcrops consist of Takla Group andesitic flows and volcanic tuff. The Early Jurassic quartz monzonite to granodiorite Black Lake stock lies immediately to the west and intrudes Takla Group volcanics.

The West zone consists of a silicified multiphase breccia and stockwork vein system with silicified volcanic clasts surrounded and cut by a quartz-chalcedony matrix, and quartz-lined veins exhibiting dogtooth textures. The zone is 25 metres long by 10 to 15 metres wide. Alteration consists of sericite replacement of biotite in clasts and up to three per cent disseminated pyrite, localized rare kaolinite alteration and epidote and chlorite forming a peripheral alteration halo.

The East zone, located 70 metres to the east, is similar in nature and occurs over a width of 15 to 25 metres and an inferred strike length of 200 to 300 metres. Quartz-chalcedony stockwork veins and veinlets, locally vuggy, comprise the East zone.

In 1988, a drill program of 5 drillholes was conducted on the Beaver Dam prospect. Drillhole 88-12 intersected the highest anomalous mineralization from the West zone. Assay results from a 2.58-metre interval of bleached and silicified hostrock with chalcedony stringers and fractures every 10 to 15 centimetres, are 59.0 grams per tonne silver and 0.53 gram per tonne gold (Assessment Report 18313). The best assay results for the East zone were from drillhole 88-12. A 0.5-metre sample was taken from a 1.1-metre zone of fracture-controlled chalcedony breccia assayed 28.1 grams per tonne silver and 0.23 gram per tonne gold (Assessment Report 18313). In 1989, two additional percussion-drill holes were drilled to the northwest with no further delineation of anomalous silver and gold mineralization in the East or West zones.

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
EMPR BULL 86

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 867
REPORT: RGEN0100

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GSC OF 306; 483
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W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1990/10/15
DATE REVISED: 1992/01/31

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 105**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOAT**, WRICH, WRICH 1,
WRICH 2, RICKY, FINLAY RIVER,
SKARN, SKARN 1-4, CONCHA,
CONCHA 1-7, GRACE, GRACE 1-14,
ERROR, ERROR 1-8, JOK,
JOK 1-6

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6335552
EASTING: 634402

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 08 37 N
LONGITUDE: 126 46 44 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Quartz-carbonate vein with sulphide mineralization, 700 metres long
by 2.5 metres wide strikes 115 degrees and dips 42 degrees south,
located 9.7 kilometres north of the Kemess North occurrence (094E
021), about 275 kilometres north of Smithers (Assessment Report
17459).

COMMODITIES: Gold Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite
COMMENTS: May also contain tetrahedrite or argentite.
ASSOCIATED: Quartz Carbonate Amethyst Chalcedony
ALTERATION: Malachite Hematite Clay
COMMENTS: Propylitic and local clay alteration are commonly associated with
veins.
ALTERATION TYPE: Propylitic Argillic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Tabular
DIMENSION: 700 x 2 Metres STRIKE/DIP: 115/42S TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	

LITHOLOGY: Andesitic Tuff
Andesitic Flow
Crystal Ash Tuff
Crystal Ash Flow
Andesite
Epiclastic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite
COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Silver	204.7000	Grams per tonne
Gold	209.9000	Grams per tonne
Copper	0.0850	Per cent
Lead	0.4470	Per cent
Zinc	0.2060	Per cent

COMMENTS: Sample R 6925, one of three samples from the same location at the southeastern end of the vein.

REFERENCE: Assessment Report 17459.

CAPSULE GEOLOGY

The Wrich prospect is located 9.75 kilometres north of the Kemess North prospect (094E 021) in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The prospect is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Goat prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Goat prospect is underlain by grey to green andesitic flows and tuffs of the Takla Group immediately south of a thrust fault contact with crystal ash tuffs and flows and associated epiclastics of the Toodoggone Formation. Takla Group hostrocks strike northwest and dip 78 degrees southwest to 79 degrees northeast.

The prospect consists of the northernmost of a group of five quartz-carbonate veins averaging 1 metre in width forming a zone up to 300 metres wide. The veins contain pyrite-chalcopyrite-galena-sphalerite and an unknown silver-bearing sulphide (tetrahedrite or argentite) in host dark green andesitic tuffs of probable Takla Group. The four remaining veins with similar orientations crop out south of the Goat prospect vein and comprise the Wrich 1 prospect (094E 122). The Goat prospect vein is 700 metres long by up to 2.5 metres wide, strikes 115 degrees and dips 42 degrees to the south. Quartz is both milky white to grey in colour, and also of the amethystine variety. Banded chalcedony, as well as open-spaced fillings occur. Malachite and hematite staining are common. Propylitic and local clay alteration are associated with the veins.

A considerable amount of rock chip sampling was conducted on veins and country rock from this zone with the following geochemical analytical results. Sample R 6925 from the north vein analysed 209.9 grams per tonne gold, 204.7 grams per tonne silver, 0.206 per cent zinc, 0.447 per cent lead and 0.085 per cent copper (Assessment Report 17459). A second sample from the same location (sample 6926) analysed 35.4 grams per tonne silver, 3.60 per cent zinc, 2.529 per cent lead, 0.023 per cent copper and trace gold (Assessment Report 17459).

Chip sampling across veins in 2002 by Stealth Minerals Ltd. produced a high assay from sample 02DB-134 of 396.5 grams per tonne silver, 165.8 grams per tonne gold, 0.01 per cent copper, 3.92 per cent lead and 9.61 per cent zinc.

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,

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IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
PR REL Stealth Minerals Ltd., Nov.18, 2002
W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW <http://www.stealthminerals.com>

DATE CODED: 1990/10/15
DATE REVISED: 1992/02/05

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 106**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOK**, JOK 3, JOK 1-6,
GRACE, GRACE 1-4, GRACE 1-14,
CONCHA, CONCHA 1-7, ERROR,
ERROR 1-8, VIP, VIP 1-40,
BEAVER DAM, FINLAY RIVER, SKARN,
SKARN 1-4

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6345253
EASTING: 630738

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 13 54 N
LONGITUDE: 126 50 03 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: A quartz vein stockwork zone contains at least 6 narrow quartz-carbonate veins over 3 to 4 metres width, located west of Finlay River and 6 kilometres east-northeast of Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 17459).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: May also contain tetrahedrite.
ASSOCIATED: Quartz Carbonate Chalcedony Amethyst Barite
ALTERATION: Silica Malachite
COMMENTS: Malachite staining is common and silicification has locally affected andesitic wallrocks.
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
DIMENSION: 4 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Quartz-carbonate veins occur over 3 to 4 metres width.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 200 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Andesitic Dacitic Flow
Crystal Ash Tuff
Crystal Ash Flow
Quartzitic/Quartzose Andesite
Andesite
Dacite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite
COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY: Copper GRADE: 0.0019 Per cent
COMMENTS: Sample R-6729.
REFERENCE: Assessment Report 17459.

CAPSULE GEOLOGY

The JOK prospect is located west of Finlay River and 6

CAPSULE GEOLOGY

kilometres east-northeast of Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The prospect is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The JOK prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

A weakly developed quartz vein stockwork zone and localized minor brecciation is associated with a strong 3 to 5-metre wide north-northeast striking near-vertical fault. At least 6 narrow (a few centimetres wide) quartz-carbonate veins with vugs, occur over a 3 to 4 metre width in grey porphyritic, andesitic to dacitic flows of the Toodoggone Formation. The north-northeast striking fault separates crystal ash tuffs and flows (west side) from quartzose andesite of the Metsantan Member (east side) of the Toodoggone Formation. Bedding attitudes strike 160 degrees and dip 30 degrees east on the southeast side of the fault.

Multibanded quartz-chalcedony and purple amethystine quartz-bearing veins and breccias contain malachite, chalcopyrite, and dark coloured sulphides (tetrahedrite?). Silicification locally affects the andesitic wallrocks. Two rock grab samples were taken from this zone. Sample R-6729 assayed 2.4 grams per tonne silver, 0.0054 per cent zinc, 0.0020 per cent lead and 0.0019 per cent copper (Assessment Report 17459).

Numerous northwest to northeast striking massive barite veins, all steeply dipping and ranging from 2 to 25 centimetres wide, occur elsewhere in the surrounding area.

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1987-C328-C346; 1988-C185-C194
EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
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MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1990/10/15
DATE REVISED: 1992/02/06

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 107**

NATIONAL MINERAL INVENTORY:

NAME(S): **BRENDA (CREEK ZONE)**, CREEK ZONE, BRENDA 1-8,
JAN 2, POCK, TOM,
TOM 3-5, JAN 1-2, HANS,
MAX, MAX 1-3

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E07W 094E02W
BC MAP:
LATITUDE: 57 16 20 N
LONGITUDE: 126 52 37 W
ELEVATION: 1175 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drillhole 88-03 (Assessment Report 18441).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6349685
EASTING: 628016

COMMODITIES: Silver Gold Lead Zinc Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Sphalerite Galena
ASSOCIATED: Quartz Chalcedony Pyrite Calcite
ALTERATION: Silica Chlorite Epidote Pyrite Hematite
K-Feldspar Kaolinite
COMMENTS: Unidentified manganese oxides and limonite are also present.
ALTERATION TYPE: Silicific'n Propylitic Argillic
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 193 +/- 7 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Alunite

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
MODIFIER: Fractured
DIMENSION: 14 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Drillhole intersections indicate mineralized intervals of 2.65 to 14.5 metres in width. The age date on alunite was taken from the White Pass area (094E 147) 2 kilometres southeast of this occurrence.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Feldspar Hornblende Quartz Trachyte
Lapilli Tuff
Latite Andesite Flow
Greywacke
Siltstone
Quartz Monzonite
Monzonitic Syenitic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the south-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1992

COMMODITY	GRADE	
Silver	26.8000	Grams per tonne
Gold	0.3590	Grams per tonne
Copper	0.0438	Per cent
Lead	0.2929	Per cent
Zinc	0.6600	Per cent

COMMENTS: Interval of ash tuff with quartz and calcite veinlets containing minor lead, zinc and pyrite between 5.2 and 7.2 metres in drillhole CR 92-01.

REFERENCE: Assessment Report 22820.

CAPSULE GEOLOGY

The Brenda prospect (Creek zone) is located along Jock Creek approximately 7.5 kilometres northeast of the Shasta occurrence (094E 050), some 280 kilometres north of Smithers. There are 4 mineralized zones on the Brenda property: the Creek zone, the White Pass area/Brenda zone (094E 147), the EB zone (094E 148) and the Takla zone (094E 146).

The prospect lies within the Omineca-Cassiar mountains at the southern end of the Toadoggone gold camp. The Brenda prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Brenda prospect area is underlain by feldspar hornblende plus or minus quartz-bearing trachyte to latite-andesite flows and lapilli tuffs with minor greywacke and siltstone of the Toadoggone Formation. Toadoggone Formation rocks are intruded by quartz monzonite and fine-grained monzonitic to syenitic dikes (probable intrusive equivalents of the Toadoggone volcanics).

Wallrock alteration consists of intense silica and propylitic alteration, consisting of epidote, chlorite, pyrite, hematite and potassium feldspar, adjacent to quartz-chalcedony stockwork zones. Local intense argillic alteration consisting of limonite, kaolinite, pyrite and manganese oxide also occurs within quartz-chalcedony breccia zones.

Quartz-chalcedony breccia and veins occur in several silicified areas at the Brenda prospect. The veins consist of colourless to light grey-coloured quartz and chalcedony. Multistage banding and cockscomb quartz are present. Late-stage calcite occurs in the centre of some veins. Veins contain pyrite (1 to 10 per cent) plus minor amounts of chalcopryrite, galena and sphalerite.

The Brenda claims were staked in 1980 for Canmine Development Company Inc. In 1981, Canmine carried out a program of geology and geophysics. In 1984, hand trenching and prospecting was conducted. In 1985, Canmine optioned the property to Canasil Resources. Detailed mapping, geophysical surveys and soil sampling was conducted along Jock Creek. In 1987, trenching and geochemical surveys were completed in a joint venture with Cyprus Gold Canada Inc.

A drill program in 1988 consisted of 4 holes for 426.22 metres. These holes intersected chalcopryrite, sphalerite, galena and pyrite mineralization (up to 30 per cent by volume over short widths) in a zone of strongly kaolinite, silica and epidote-altered quartz-chalcedony stockwork breccia and veins across widths of 2.65 metres to 14.5 metres. Anomalous silver, lead and zinc were obtained in all four holes. The best weighted average silver intersection of 20.2 grams per tonne over 7.5 metres occurs in drillhole 88-01 or 34.63 grams per tonne over 3 metres (Assessment Report 18441). Drillhole 88-01 also hosts the best weighted averages for lead with 0.8468 per cent over 1.5 metres and 0.5529 per cent over 3 metres (Assessment Report 18441). The highest zinc value was 1.6525 per cent zinc over

CAPSULE GEOLOGY

1.4 metres from drillhole 88-02 (Assessment Report 18441). The best weighted average value comes from drillhole 88-03 with 0.3201 per cent zinc over 23.1 metres (Assessment Report 18441). The highest gold value was 0.0104 gram per tonne from drillhole 88-03 (Assessment Report 18441).

In 1989, trenching and geophysical and geochemical surveys were completed on the property.

A program of followup trenching was conducted at the Brenda prospect in 1990 on the Creek zone, the White Pass east zone and the EB zone. A total of eight trenches were excavated but bedrock exposure in these trenches was poor. Assay results from a limited number of rock samples were poor with only one yielding significant results. Sample P5227 collected from trench CG-8 analysed 11.640 grams per tonne gold (Assessment Report 20963).

In 1991 (Assessment Report 22272), hand trenching and rock sampling were completed on the White Pass East zone, the EB zone and the Creek zone. A geochemical survey was completed on the White Pass East zone.

In 1992, 2 drillholes were completed on the Creek zone, 4 drillholes on the White Pass East zone and 7 holes on the EB zone. Drillhole CR 92-01 on the Creek zone contained an interval (from 5.2 to 7.2 metres) that assayed 0.359 grams per tonne gold, 26.8 grams per tonne silver, 0.0438 per cent copper, 0.2929 per cent lead and 0.66 per cent zinc (Assessment Report 22820). Drillhole CR 92-02 contained lower assays in copper and zinc only.

In 1993 (Assessment Report 23385), Romulus Resources drilled 4 deep holes in the White Pass area (094E 147) on the Brenda zone.

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GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986; June 11, July 15, Sept. 1,
1987; Aug. 26, Dec. 1, 1988; Nov. 14, 1989; June 6, 1990; Nov.
19, 1993
ECON GEOL Vol. 86, pp. 529-554, 1991
IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986; July 3, 1995
N MINER MAG March 1988, p. 1
V STOCKWATCH Aug. 15, 1966; Aug. 24, Dec. 1, 1988; May 23, July 24,
Aug. 27, 1990; Jan. 14, 1991; Feb. 23, June 14, Aug. 16, Nov. 16,
1993; Feb. 4, 1994; Jan. 6, June, Nov. 22, 1995
W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW <http://www.infomine.com/>

DATE CODED: 1990/10/15
DATE REVISED: 1996/08/28

CODED BY: TGS
REVISED BY: TGS

FIELD CHECK: Y
FIELD CHECK: Y

MINFILE NUMBER: **094E 108**

NATIONAL MINERAL INVENTORY:

NAME(S): **LAKE 22**, LAKE, LAKE 1-4,
RON, RON 1-2, THUTADE,
THUTADE 1-44

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 04 03 N
LONGITUDE: 126 50 25 W
ELEVATION: 1720 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6326972
EASTING: 630948

COMMENTS: Location of a mineralized quartz vein near an andesite-marble contact, approximately 8.5 kilometres west-northwest of the Kemess South occurrence (094E 094), about 260 kilometres north of Smithers (Assessment Report 13022).

COMMODITIES: Silver Copper Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Galena
COMMENTS: Significant minerals are inferred from commodities.
ASSOCIATED: Quartz
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic Skarn
TYPE: K02 Pb-Zn skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Plagioclase Augite Porphyritic Andesite
Porphyritic Monzonite
Quartz Monzonite
Granodiorite
Marble
Argillite
Chert
Quartzite
Breccia
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Zeolite
COMMENTS: Located in the southwest corner of Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 73.9000 Grams per tonne
Copper 2.3400 Per cent
Lead 0.1240 Per cent
Zinc 0.9100 Per cent
COMMENTS: Grab sample from a mineralized quartz vein in subcrop.
REFERENCE: Assessment Report 13022.

CAPSULE GEOLOGY

The Lake 22 showing is located approximately 8.5 kilometres west-northwest of the Kemess South occurrence (094E 094), some 260

CAPSULE GEOLOGY

kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Lake 22 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Thutade Lake area is largely underlain by andesite volcanics and related sediments of the Takla Group and small pockets of Asitka Group sediments. The major structures in the area are north-northwest striking faults, such as the Moose Valley fault and the Ingenika fault. Extensive exploration, including diamond drilling, was conducted on the ground around the Lake 22 showing between 1970 to 1984. Some nine mineral showings were found. The area hosts fault and/or skarn controlled copper, lead, zinc and silver occurrences throughout.

The Lake 22 showing is underlain by fine grained to coarse plagioclase and augite porphyritic, grey to greenish grey to maroon andesite, argillite, chert, quartzite, breccia and conglomerate of the Takla Group and the Early Jurassic Kemess pluton, a large intrusive body of porphyritic monzonite, quartz monzonite and granodiorite. Several bodies of marble have been mapped along the northeast corner of Thutade Lake belonging to the Asitka Group.

Skarn and quartz vein mineralization were discovered at the Lake 22 showing, north of the Cairn showing (094E 012). A sample of skarn mineralized subcrop assayed 2.78 per cent zinc, 0.73 per cent lead, 0.064 per cent copper and 92.1 grams per tonne silver (Assessment Report 13022). A sample of mineralized quartz vein assayed 2.34 per cent copper, 0.91 per cent zinc, 0.124 per cent lead and 73.9 grams per tonne silver (Assessment Reports 13022, 18241).

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1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
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- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- MIN REV September/October, 1982; July/August, 1986
- N MINER MAG March 1988, p. 1
- W MINER April, 1982; October 13, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/07
DATE REVISED: 1992/01/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 109**

NATIONAL MINERAL INVENTORY:

NAME(S): **PROMETHEUS 2**, PROMETHEUS 1, BANSHEE,
MINOTAUR, WEREWOLF

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E13E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 55 05 N
LONGITUDE: 127 38 43 W
ELEVATION: 1780 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6420391
EASTING: 580256

COMMENTS: The location of an anomalous silver rock sample from metarhyolite, containing trace galena. The Prometheus 2 showing is located 22 kilometres northwest of Mount Albert Dease, north and west of Park Creek (Assessment Report 9615). Dease Lake is 135 kilometres to the northwest.

COMMODITIES: Silver Gold Zinc Lead Copper

MINERALS

SIGNIFICANT: Galena
COMMENTS: Trace galena is found in metarhyolite (Assessment Report 9615).
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Syngenetic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Paleozoic	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Meta Rhyolite
Andesitic Volcanic
Basaltic Volcanic
Felsic Tuff
Dacitic Pyroclastic
Andesitic Pyroclastic
Argillite
Meta Rhyolite Tuffite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Cassiar Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1981
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Silver	10.8000 Grams per tonne
Gold	0.0680 Grams per tonne
Copper	0.0050 Per cent
Lead	0.0540 Per cent
Zinc	0.0260 Per cent

COMMENTS: A rock sample taken from metarhyolite with trace galena.
REFERENCE: Assessment Report 9615.

CAPSULE GEOLOGY

The Prometheus 2 showing, consisting of an anomalous silver analytical result from a rock sample of metarhyolite containing trace galena, is located 22 kilometres northwest of Mount Albert Dease, north and west of Park Creek (Assessment Report 9615). Dease Lake is 135 kilometres to the northwest.

The Prometheus 2 showing is underlain by a mixed metavolcanic-metasedimentary assemblage. Early regional mapping correlated these rocks with the Permian Asitka Group based on lithological similarities (Geological Survey of Canada Open File 483). Fossil evidence suggests a Mississippian age for at least part of this sequence (Geological Survey of Canada Paper 80-1B, pages 207-211). A tentative Devonian to Permian age is assigned to these rocks. Upper

CAPSULE GEOLOGY

Triassic Takla Group rocks lie to the northwest of the showing (Assessment Report 9615). To the southwest lie Late Triassic granitoids of the Stikine Terrane, and Early to Middle Jurassic Three Sisters granitoid suite. To the southeast and northeast lies a granitoid suite, of similar age to the Guichon granitoid suite, in the Stikine and Quesnel terranes west and east of the Kutcho fault (Open File 1990-12).

On a property scale, rocks surrounding the Prometheus 2 showing have been divided into four units. The first of these units is a mixed metavolcanic-metasedimentary unit consisting of alternating intermediate pyroclastics and argillites. These intermediate pyroclastic rocks, dacitic to andesitic in composition, are composed of quartz, sericite, chlorite, actinolite, limonite and minor calcite. Metarhyolite overlies the previous unit. It is composed of 70 per cent quartz, 28 per cent sericite and 2 per cent combined iron oxides and pyrite. Locally this unit contains up to 3 per cent disseminated pyrite and minor galena. At the nearby Banshee showing (094E 056), this unit hosts pyrite, sphalerite, chalcopyrite and minor galena. The most widespread of the four units is a metavolcanic unit, consisting of mafic volcanic rock with felsic tuff layers. Composition ranges from andesite to basalt. These three units are overlain by a cherty metarhyolite tuffite unit. Quartz, feldspar, actinolite, calcite and iron oxides comprise this unit. A weak to strong foliation is pervasive in all units except the cherty metarhyolite tuffite.

The rocks underlying the showing have undergone two phases of deformation and have been metamorphosed to greenschist facies. The first phase of deformation was penetrative and produced a pervasive foliation. The second, weaker phase of deformation produced local kink bands and weakly defined foliation. A major fault trending north-northwest is found immediately west of the showing.

Mineralization consists of trace galena in metarhyolite. Results from a rock sample of this mineralization was 10.8 grams per tonne silver, 0.068 gram per tonne gold, 0.054 per cent lead, 0.026 per cent zinc and 0.005 per cent copper (Assessment Report 9615).

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- GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/12

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 110**

NATIONAL MINERAL INVENTORY:

NAME(S): **STEEL 1**, STEEL 1-2, DRY,
DRY 1, DRY 15-17, DRY 27,
FIRE, FIRE 1-3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 08 53 N
LONGITUDE: 126 58 45 W
ELEVATION: 1640 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6335679
EASTING: 622263

COMMENTS: Location of a quartz-carbonate shear zone hosting chalcopyrite, approximately 11.7 kilometres south-southeast of the Shasta occurrence (094E 050), about 270 kilometres north of Smithers (Assessment Report 17452).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate Pyrite Magnetite
ALTERATION: Epidote Chlorite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: STRIKE/DIP: 025/90E TREND/PLUNGE:
COMMENTS: Veinlets up to 1 centimetre wide strike 025 degrees and dip vertically (Assessment Report 17452).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Andesite
Tuffaceous Sediment/Sedimentary
Porphyritic Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist Zeolite
COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY GRADE
Copper 0.4400 Per cent
COMMENTS: Sample of chalcopyrite and malachite in a 1-centimetre wide quartz-carbonate shear.
REFERENCE: Assessment Report 17452.

CAPSULE GEOLOGY

The Steel 1 showing is located approximately 11.75 kilometres south-southeast of the Shasta occurrence (094E 050), some 270 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Steel 1 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments,

CAPSULE GEOLOGY

volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Tooodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

Exposures of predominantly Takla Group andesite and tuffaceous sediments are abundant around the Steel 1 showing. Takla Group andesites are aphanitic, medium grey and massive. They are crosscut by 2 to 10-millimetre wide quartz-carbonate veins, striking 025 degrees and dipping vertical. Near the contact between Takla Group rocks and porphyritic granodiorite to quartz monzonite of the Early Jurassic Kemess pluton, finely disseminated pyrite and magnetite are associated with epidote-chlorite alteration and rare localized stockwork quartz veinlets 1 to 2 millimetres in diameter.

A sample with chalcopyrite and malachite was taken from a quartz-carbonate shear in Takla Group andesite. Assay results from this sample are 0.44 per cent copper, 1.6 grams per tonne silver and 0.027 gram per tonne gold (Assessment Report 17452).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
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GSC OF 306; 483
GSC P 80-1A, pp. 27-32
W MINER April, 1982; October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/08
DATE REVISED: 1992/01/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 111**

NATIONAL MINERAL INVENTORY:

NAME(S): **STEEL 2, STEEL 1-2, DRY,
DRY 1, DRY 15-17, DRY 27,
FIRE, FIRE 1-3**

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6335643
EASTING: 623139

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 08 51 N
LONGITUDE: 126 57 53 W
ELEVATION: 1640 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: Location of a quartz-carbonate vein hosting chalcopyrite, approximately 11.7 kilometres south-southeast of the Shasta occurrence (094E 050), about 270 kilometres north of Smithers (Assessment Report 17452).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate Pyrite Magnetite
ALTERATION: Epidote Chlorite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION:
COMMENTS: Veinlets up to 1 centimetre wide.

STRIKE/DIP: 025/90E TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Andesite
Tuffaceous Sediment/Sedimentary
Porphyritic Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1988
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Silver	5.4000 Grams per tonne
Gold	3.2500 Grams per tonne
Copper	0.3300 Per cent

COMMENTS: Sample of chalcopyrite and malachite in a 7 to 10-centimetre wide quartz-carbonate vein.
REFERENCE: Assessment Report 17452.

CAPSULE GEOLOGY

The Steel 2 showing is located approximately 11.75 kilometres south-southeast of the Shasta occurrence (094E 050), some 270 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Steel 2 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane

CAPSULE GEOLOGY

Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Exposures of predominantly Takla Group andesite and tuffaceous sediments are abundant around the Steel 2 showing. Takla Group andesites are composed of aphanitic, medium grey, massive andesites which are crosscut by 2 to 10-millimetres wide quartz-carbonate veins. These veins strike 025 degrees and dip vertical. Near the contact between Takla Group rocks and porphyritic granodiorite to quartz monzonite of the Early Jurassic Kemess pluton, finely disseminated pyrite and magnetite are associated with epidote-chlorite alteration and rare localized stockwork quartz veinlets 1 to 2 millimetres in diameter.

A sample with chalcopyrite and malachite was taken from a quartz-carbonate vein, 7 to 10 centimetres wide, in Takla Group andesite. Assay results from this sample are 0.33 per cent copper, 5.4 grams per tonne silver and 3.25 grams per tonne gold (Assessment Report 17452).

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W MINER April, 1982; October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/08
DATE REVISED: 1992/01/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 112**

NATIONAL MINERAL INVENTORY:

NAME(S): **FIRE 1, FIRE, FIRE 1-10, BRULE, BRULE 3-4, UBBLE, UBBLE 7-11, BREN, CHANCE GP., CALCINE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 05 06 N
LONGITUDE: 126 53 12 W
ELEVATION: 1250 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6328831
EASTING: 628076

LOCATION ACCURACY: Within 500M

COMMENTS: Massive galena, sphalerite, pyrite and chalcopyrite occur in limestone, approximately 13 kilometres north-northwest of the Kemess South occurrence (094E 094) and 4.9 kilometres north-northwest of the northern end of Thutade Lake, south of the Firesteel River, about 270 kilometres north of Smithers (Assessment Report 14118).

COMMODITIES: Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Pyrite Chalcopyrite

ASSOCIATED: Carbonate Quartz

ALTERATION: Silica

ALTERATION TYPE: Silicific'n

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Vein
CLASSIFICATION: Replacement Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Upper Triassic
Permian

GROUP

Takla
Asitka

FORMATION

Unnamed/Unknown Formation
Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Fossiliferous Limestone
Greywacke
Chert
Volcaniclastic Conglomerate
Mafic Tuff
Lapilli Tuff
Plagioclase Porphyry Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional Contact

PHYSIOGRAPHIC AREA: Spatsizi Plateau

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

CAPSULE GEOLOGY

The Firesteel 1 showing is located approximately 13.2 kilometres north-northwest of the Kemess South occurrence (094E 094) and 4.9 kilometres north-northwest of the northern end of Thutade Lake, south of the Firesteel River. The occurrence lies on the eastern edge of the Spatsizi Plateau at the southern end of the Toodoggone gold camp, some 270 kilometres north of Smithers. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking

CAPSULE GEOLOGY

faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Firesteel 1 showing is underlain by pale grey, massive, recrystallized, fossiliferous limestone of the Asitka Group and mafic volcanics of the Takla Group. Dark green mafic tuffs, lapilli tuffs and plagioclase porphyry flows comprise mafic volcanics. Greywacke, chert and volcanoclastic conglomerate are associated with the volcanics.

To the west of the Firesteel occurrence (094E 002), trenching has uncovered massive galena with a little sphalerite, pyrite and chalcopryite in a steep dipping 22.86-centimetres wide zone in limestone (Assessment Report 14118).

Other exposures to the south of this showing consists of quartz veins paralleling bedding in limestone, siliceous zones along tuffaceous horizons in limestone, and fissure veins. Exposures lie along both sides of a north-trending limestone ridge, immediately west of Bren Creek.

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291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115
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- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- W MINER April, 1982
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/09
DATE REVISED: 1992/01/09

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 113**

NATIONAL MINERAL INVENTORY:

NAME(S): **JIM 1-2**, JIM, AURA,
SER, SER 1

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

LATITUDE: 57 00 47 N
LONGITUDE: 126 37 59 W
ELEVATION: 1810 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Narrow, discontinuous limonitic shear zone within Takla Group andesites, approximately 7 kilometres due east of the Kemess South occurrence (094E 094), about 250 kilometres north of Smithers (Assessment Report 17461).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6321330
EASTING: 643720

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Significant mineral is inferred from commodity.

ASSOCIATED: Quartz
ALTERATION: Epidote Chlorite Limonite

ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Andesite
Limestone
Argillite
Ash Flow
Lapilli Ash Tuff
Block Lapilli Tuff
Epiclastic
Andesitic Lava Flow

HOSTROCK COMMENTS: Volcanics are assigned to the lowermost Adoogacho Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP: Post-mineralization

GRADE: Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SHEAR

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1988

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

0.3660

Per cent

REFERENCE: Assessment Report 17461.

CAPSULE GEOLOGY

The Jim 1-2 showing is located approximately 7 kilometres due east of the Kemess South occurrence (094E 094). It lies in the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp, some 270 kilometres north of Smithers. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks.

CAPSULE GEOLOGY

Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Jim 1-2 showing is underlain predominantly by Takla Group volcanics consisting of massive, dark grey to grey-black, epidote-chlorite altered andesite. To the west, Asitka Group crystalline limestone, argillite and intercalated andesite are underlying and in thrust contact with the Takla Group andesitic volcanics and overlying and in thrust contact with the Lower Jurassic Adoogacho Member of Toodoggone Formation. The Adoogacho Member consists of reddish and mauve variably welded ash flow and lapilli-ash tuffs, subordinate block-lapilli tuff, epiclastics and andesitic lava flows. The Jim 1-2 showing is immediately east of a major northwest-trending linear associated with the Saunders Creek fault.

Takla Group andesites at the Jim 1-2 showing are cut locally by narrow 1 to 3 millimetres wide, randomly oriented barren quartz veinlets. A sample from a narrow, discontinuous, limonitic shear zone assayed 2.0 grams per tonne silver, 0.366 per cent copper, 0.081 per cent zinc, and 0.044 per cent lead (Assessment Report 17461).

A silt sample survey conducted in 1981, approximately 1 kilometre to the west of the Jim showing, revealed anomalous silver, copper, lead and zinc values from a gossan located along a faulted contact between Takla Group-Toodoggone Formation volcanics. A silt sample from the southern end of the gossan analysed 1.6 grams per tonne silver (Assessment Report 9006). During an exploration program on the Ser 1 Claim in 1981, a sample was taken from a gossan zone 1 kilometre to the south of the Jim showing. Assay results from this sample were 0.157 per cent copper (Assessment Report 9273).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
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- IPDM Nov/Dec 1983
- ECON GEOL Vol. 86, pp. 529-554, 1991
- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/13
DATE REVISED: 1992/06/30

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 114**

NATIONAL MINERAL INVENTORY:

NAME(S): **TUT**, TUT 1-2, NOR,
NOR 1-3, NOR 7

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

LATITUDE: 57 01 36 N
LONGITUDE: 126 49 50 W
ELEVATION: 1290 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Malachite and limonite-altered quartz breccia vein with chalcopyrite mineralization, approximately 5.5 kilometres northwest of the Kemess South occurrence (094E 094), east of Thutade Lake and immediately east of the northern tip of Bicknell Lake, about 280 kilometres north of Smithers (Assessment Report 15361).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6322446
EASTING: 631682

COMMODITIES: Copper Zinc Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Sphalerite
COMMENTS: Chalcopyrite and pyrite are the only identified significant minerals; sphalerite is inferred from commodity.

ASSOCIATED: Quartz Epidote Pyrite

ALTERATION: Limonite Malachite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Shear
CLASSIFICATION: Hydrothermal Epigenetic

DIMENSION: STRIKE/DIP: 080/70E

COMMENTS: Vuggy quartz-breccia veins strike 060 to 100 degrees and dip 60 to 80 degrees east (Assessment Report 15361). TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	
Permian	Asitka	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Andesite
Limestone
Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1986

SAMPLE TYPE: Chip

COMMODITY

GRADE

Silver	45.5000	Grams per tonne
Copper	1.4700	Per cent
Zinc	1.7000	Per cent

COMMENTS: Length of chip sample was not reported.

REFERENCE: Assessment Report 15361.

CAPSULE GEOLOGY

The Tut showing is located approximately 5.5 kilometres northwest of the Kemess South occurrence (094E 094), east of Thutade Lake and immediately east of the northern tip of Bicknell Lake. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp, some 280 kilometres north of Smithers.

CAPSULE GEOLOGY

The Tut 12 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Tut showing is underlain by Asitka Group limestone and Takla Group and Toodoggone Formation volcanic rocks. These are intruded by monzonite of the Early Jurassic Kemess pluton.

Mineralization consists of rusty-weathering andesites which are locally sheared and altered with vuggy quartz breccia veins up to 15 centimetres wide. These veins contain small epidote knots, 5 per cent pyrite, up to 2 per cent chalcopryite, limonite and traces of malachite. The veins strike 060 to 100 degrees and dip 60 to 80 degrees east.

Several rock samples, both grab and chip, were taken within a 35 metre radius from vuggy quartz breccia veins and results indicate anomalous silver, copper and zinc. The most representative assay from this group of veins was from sample 86TS-3, consisting of quartz breccia with andesite fragments and mineralization consisting of chalcopryite, limonite and malachite. Assay results for this sample were 45.5 grams per tonne silver, 1.47 per cent copper, 1.70 per cent zinc, 0.069 per cent lead and 0.08 gram per tonne gold (Assessment Report 15361).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
- EMPR FIELDWORK 1980, pp. 124-129; 1983, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- ECON GEOL Vol. 86, pp. 529-554, 1991
- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/13
DATE REVISED: 1992/01/13

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 115**

NATIONAL MINERAL INVENTORY:

NAME(S): **FOG 1**, FOG

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 04 46 N
LONGITUDE: 126 39 26 W
ELEVATION: 1660 Metres

NORTHING: 6328667
EASTING: 641999

LOCATION ACCURACY: Within 500M

COMMENTS: Massive barite and galena with chalcopyrite hosted in ash-flow tuffs and lapilli tuffs, located immediately west of the Mess occurrence (094E 070), between Attycelley and Kemess creeks, about 250 kilometres north of Smithers (Assessment Report 17460).

COMMODITIES: Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Galena Chalcopyrite Sphalerite
COMMENTS: Sphalerite is inferred from commodity.
ASSOCIATED: Quartz Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 20 x 2 Metres STRIKE/DIP: 150/ TREND/PLUNGE:
COMMENTS: Initial sampling and geology have exposed a zone 15 to 20 metres long and 0.5 to 2 metres wide, striking 150 degrees (Assessment Report 17460).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Welded Ash Flow
Lapilli Ash Tuff
Block Lapilli Tuff
Andesite
Conglomerate
Epiclastic
Andesitic Lava Flow

HOSTROCK COMMENTS: Volcanics are assigned to the Adoogacho and Moyez members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
	CATEGORY: Assay/analysis	YEAR: 1988	
	SAMPLE TYPE: Grab		
	COMMODITY	GRADE	
	Silver	219.5000	Grams per tonne
	Copper	0.6700	Per cent
	Lead	2.8000	Per cent
	Zinc	5.2600	Per cent

REFERENCE: Assessment Report 17460.

CAPSULE GEOLOGY

The Fog 1 showing is located immediately west of the Mess prospect (094E 070), between Attycelley and Kemess creeks, some 250 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Fog 1 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

CAPSULE GEOLOGY

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata. A major structural zone associated with the Saunders Creek regional fault cuts diagonally through the area, striking northwest.

The Fog claim within which this occurrence is situated was originally staked in 1987 to cover a strong regional structure, which is thought to have acted as an important ore control for deposition of epithermal mineralization within the Toodoggone gold camp.

The Fog 1 showing is underlain by several members of the Toodoggone Formation. The Adoogacho Member, the lowest stratigraphic division, consists of reddish and mauve, variably welded ash flows and lapilli-ash tuffs with subordinate block-lapilli tuff, epiclastics and rare andesitic lava flows. Grey to maroon conglomerates of the Moyez Member underlie the central and northern part surrounding the showing. The conglomerate contains 20 to 30 per cent by volume granite clasts averaging 4 centimetres diameter.

Prospecting, geological mapping and sampling have exposed a zone 15 to 20 metres long by 0.5 to 2 metres wide of massive barite and galena with chalcopyrite hosted in quartz veins. The zone strikes about 150 degrees. Several rock samples were taken along and near the structure associated with the Saunders Creek fault. Sample R 6717, taken along the structure, consists of massive barite and galena with chalcopyrite. Assay results from this sample were 219.5 grams per tonne silver, 5.26 per cent zinc, 2.80 per cent lead and 0.67 per cent copper (Assessment Report 17460).

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- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
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- IPDM Nov/Dec 1983
- ECON GEOL Vol. 86, pp. 529-554, 1991
- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/15
DATE REVISED: 1992/01/15

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 116**

NATIONAL MINERAL INVENTORY:

NAME(S): **FOG 2, FOG, AUDREY,
AUDREY EAST, AUDREY WEST**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 05 10 N
LONGITUDE: 126 40 00 W
ELEVATION: 1660 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6329389
EASTING: 641402

COMMENTS: Andesite, mapped as belonging to the Toodoggone Formation (Moyez Member), is malachite stained, and is located immediately west of the Mess occurrence (094E 070), between Attycelley and Kemess creeks, about 250 kilometres north of Smithers (Assessment Report 17460).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Andesite
Block Lapilli Tuff
Conglomerate
Epiclastic
Welded Ash Flow
Lapilli Ash Tuff
Andesitic Lava Flow

HOSTROCK COMMENTS: Volcanics are assigned to the Adoogacho and Moyez members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	14.6000	Grams per tonne
Copper	0.3750	Per cent

COMMENTS: The best of three samples taken from this location.
REFERENCE: Assessment Report 17460.

CAPSULE GEOLOGY

The Fog 2 showing is located immediately west of the Mess prospect (094E 070), between Attycelley and Kemess creeks, some 250 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Fog 2 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz

CAPSULE GEOLOGY

monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinally strata. A major structural zone associated with the Saunders Creek regional fault cuts diagonally through the area, striking northwest.

The Fog 2 showing is underlain by several members of the Toodoggone Formation. The Adoogacho Member, the lowest stratigraphic division, consists of reddish and mauve, variably welded ash flows and lapilli-ash tuffs with subordinate block-lapilli tuff, epiclastics and rare andesitic lava flows. Grey to maroon conglomerates of the Moyez Member underlie the central and northern part surrounding the showing. The conglomerate contains 20 to 30 per cent by volume granite clasts averaging 4 centimetres diameter.

Several rock samples were taken along and near the structure associated with the Saunders Creek fault. Sample R 2049, consisting of malachite-stained andesite, was taken near the structure. Assay results from this sample were 14.6 grams per tonne silver, 0.375 per cent copper, 0.0024 per cent zinc and 0.0022 per cent lead (Assessment Report 17460).

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/16
DATE REVISED: 1992/06/30

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 117**

NATIONAL MINERAL INVENTORY:

NAME(S): **FOG 3, FOG, AUDREY,
AUDREY EAST, AUDREY WEST**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 04 51 N
LONGITUDE: 126 39 19 W
ELEVATION: 1660 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6328825
EASTING: 642112

COMMENTS: The west end of a limonitic gossan in altered volcanic rocks, associated with mineralization and alteration of the Mess occurrence (094E 070), between Attycelley and Kemess creeks, about 250 kilometres north of Smithers (Assessment Report 17460).

COMMODITIES: Silver Lead

MINERALS

SIGNIFICANT: Limonite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Gossan
Andesitic Lava Flow
Welded Ash Flow
Lapilli Ash Tuff
Andesite
Conglomerate
Block Lapilli Tuff
Epiclastic

HOSTROCK COMMENTS: Volcanics are assigned to the Adoogacho and Moyez members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1988

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

232.5000

Grams per tonne

Lead

0.4150

Per cent

COMMENTS: Sample was the best of two taken within a 60 metre radius of this location.

REFERENCE: Assessment Report 17460.

CAPSULE GEOLOGY

The Fog 3 showing is located immediately west of the Mess prospect (094E 070), between Attycelley and Kemess creeks, some 250 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Fog 3 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with

CAPSULE GEOLOGY

Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata. A major structural zone associated with the Saunders Creek regional fault cuts diagonally through the area, striking northwest.

The Fog 3 showing is underlain by several members of the Toodoggone Formation. The Adoogacho Member, the lowest stratigraphic division, consists of reddish and mauve, variably welded ash flows and lapilli-ash tuffs with subordinate block-lapilli tuff, epiclastics and rare andesitic lava flows. Grey to maroon conglomerates of the Moyez Member underlie the central and northern part surrounding the showing. The conglomerate contains 20 to 30 per cent by volume granite clasts averaging 4 centimetres diameter.

Two rock samples were taken from the western end of a gossan zone hosting the Mess prospect (094E 070). Sample R 6719, consisting of limonitic gossan in altered volcanic rocks assayed 232.5 grams per tonne silver, 0.4150 per cent lead, 0.0879 per cent zinc and 0.0183 per cent copper (Assessment Report 17460).

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- N MINER MAG March 1988, p. 1
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- IPDM Nov/Dec 1983
- ECON GEOL Vol. 86, pp. 529-554, 1991
- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/16
DATE REVISED: 1992/06/30

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 118**

NATIONAL MINERAL INVENTORY: 094E2 Cu5

NAME(S): **RAT 1**, RAT, RAT 1-2,
RAT 1-20, KEMESS WEST, DUNCAN
DUNCAN 3-4, RON, RON 11

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 01 18 N
LONGITUDE: 126 47 18 W
ELEVATION: 1540 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6321965
EASTING: 634257

COMMENTS: Pyrite and trace chalcopyrite occur in numerous hairline fractures within a quartzose margin to a quartz feldspar porphyry intrusion, located at the south end of Duncan Lake, about 260 kilometres north of Smithers (Assessment Report 18442).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Limonite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Epigenetic Hydrothermal Igneous-contact

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Triassic	Takla	Unnamed/Unknown Formation	
Lower Jurassic			Kemess Pluton

ISOTOPIC AGE: 207 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Cherty Sediment/Sedimentary
Augite Andesite Flow
Quartz Monzonite Porphyry
Quartz Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1989
SAMPLE TYPE:	Grab		
COMMODITY	<u>GRADE</u>		
Silver	7.1000	Grams per tonne	
Gold	0.3150	Grams per tonne	
Copper	0.1090	Per cent	

COMMENTS: One of three samples taken from the quartzose zone.
REFERENCE: Assessment Report 18442.

CAPSULE GEOLOGY

The Rat 1 showing is located at the south end of Duncan Lake and within the Kemess South property (094E 094), some 260 kilometres north of Smithers. The Kemess property, located 11 kilometres southeast of the Finlay River, is the most intensely explored porphyry copper-gold prospect in the Toodoggone area. To date, four zones of porphyry copper-gold mineralization have been identified on the Kemess property. The Kemess North and West zones (formerly the Kemess and Rat properties respectively) were initially explored in the late 1960s and early 1970s. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc

CAPSULE GEOLOGY

assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake Suite of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Rat 1 showing and most of the surrounding area is underlain by augite andesite flows and minor amounts of cherty sediments of the Takla Group. The Kemess pluton, a quartz monzonite porphyry intrusion, crops out to the north of the showing and intrudes Takla lithologies. This intrusion is bordered by a quartz feldspar porphyry intrusion and a marginal quartzose zone, which seems to be a hybrid zone between the porphyry and cherty sediments of the Takla Group.

Mineralization consists of 1 to 2 per cent disseminated pyrite and trace chalcopyrite with limonite in a stockwork of numerous hairline fractures hosted in the quartzose zone. Assay results of material from this stockwork were 7.1 grams per tonne silver, 0.1090 per cent copper, 0.0050 per cent zinc, 0.0020 per cent lead and 0.315 grams per tonne gold (Assessment Report 18442).

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1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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- N MINER MAG March 1988, p. 1
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- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/17
DATE REVISED: 1992/01/17

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 119**

NATIONAL MINERAL INVENTORY:

NAME(S): **KEM**, KEM 6, KEM 1-9,
AUDRY, AUDRY 1-2, AUDREY WEST,
AUDREY EAST, ATTYCELLEY, ATTYCELLEY NO 1 GP,
ATTYCELLEY NO 2 GP, ATTY, ATTY GOSSAN

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 05 08 N
LONGITUDE: 126 44 04 W
ELEVATION: 1750 Metres

NORTHING: 6329189
EASTING: 637297

LOCATION ACCURACY: Within 500M

COMMENTS: Location of Trench 1, exposing vein A. Located 11 kilometres east of the northern tip of Thutade Lake, about 250 kilometres north of Smithers (Assessment Report 10742).

COMMODITIES: Copper Silver Lead Zinc Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate Calcite Hematite Magnetite
Pyrite

ALTERATION: Chlorite Hematite

COMMENTS: The vein is generally sharply bounded by slightly propylitized hostrock.

ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Podiform Disseminated

CLASSIFICATION: Hydrothermal Epigenetic

SHAPE: Bladed

MODIFIER: Faulted

DIMENSION: 150 x 4 Metres STRIKE/DIP: 110/60E TREND/PLUNGE:

COMMENTS: A mineralized vein striking 110 degrees and dipping 50 to 70 degrees east can be traced over 150 metres along surface and has a maximum width of 4 metres (Assessment Report 10742).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER

Upper Triassic Takla Undefined Formation

Lower Jurassic Hazelton Toodoggone

Lower Jurassic Kames Pluton

ISOTOPIC AGE: 207 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Hornblende

Lower Jurassic Black Lake Suite

LITHOLOGY: Augite Porphyry Basalt
Volcaniclastic Tuff
Dacite
Andesite
Dacite Crystal Lapilli Tuff
Andesite Crystal Lapilli Tuff
Dacite Flow
Andesite Flow
Dacite Breccia
Monzonite

HOSTROCK COMMENTS: The Kames pluton is part of the Early Jurassic Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Chip

YEAR: 1982

COMMODITY	GRADE	
Silver	29.9500	Grams per tonne
Gold	0.4420	Grams per tonne
Copper	4.2400	Per cent
Lead	0.8000	Per cent
Zinc	0.2000	Per cent

COMMENTS: Sample was a chip or channel from panel 211 in trench 1.
 REFERENCE: Assessment Report 10742.

CAPSULE GEOLOGY

The Kem occurrence is located 11 kilometres east of the northerly tip of Thutade Lake at the southern end of the Toodoggone gold camp, about 250 kilometres north of Smithers. The Attycelley showing (094E 022) lies approximately 1 kilometre to the east of the Kem showing. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Kem showing is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by plutons and other intrusions of the Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Kem showing is underlain by dacite and andesite crystal and lapilli tuffs and flows, augite crystal tuffs and ash tuffs, and augite porphyry basalt of the Takla Group. To the southwest and east lies dacite lapilli and crystal tuffs and breccias, and andesite crystal tuffs of the Toodoggone Formation. To the northeast, Toodoggone Formation volcanics are interbedded with conglomerate, sandstone and siltstone. A monzonite intrusive body called the Kemess pluton, part of the Black Lake Suite, outcrops to the northwest.

The main zone of mineralization is hosted by east to southeast-trending, southward-dipping fractures and occurs as two sharply defined, podiform or lensoid quartz-carbonate veins; Vein A and Vein B. These veins exhibit displacement up to 25 metres along later northwest-striking faults.

Vein A can be traced along its controlling structures in augite porphyry basalt and volcanoclastic tuffs of the Takla Group for about 150 metres along surface. The vein strikes 110 degrees and dips 50 to 70 degrees east and is 1 metre wide on average, ranging from 0.2 to 4 metres wide. The northern end of the vein is terminated by a younger fault. Quartz, calcite, hematite, magnetite, pyrite and chalcopryrite comprise the mineralogy. Wallrocks are slightly propylitized. Stringers of quartz, hematite, magnetite, chalcopryrite and pyrite occur in patches along the contacts of the vein. Three trenches were dug across the vein in 1982. Sampling was conducted over standard panel areas of the trenches. Assay results from panel 211, trench 1, were 4.24 per cent copper, 29.95 grams per tonne silver, 0.80 per cent lead, 0.20 per cent zinc and 0.442 gram per tonne gold (Assessment Report 10742).

Vein B occurs 100 metres east of trench 1. The vein ranges in width from 1.5 to 4 metres, striking 085 to 090 degrees and dipping approximately 60 degrees south. The vein occupies an earlier fracture in host dacite and andesite crystal and lapilli tuffs and flows of the Takla Group. It is composed of quartz with 5 to 25 per cent pyrite, 5 per cent hematite and trace chalcopryrite. Contact with chloritic wallrocks is sharp. Minor stringers of quartz, carbonate and sulphides are locally present in host wallrock. The vein is crosscut by later faults and shear zones up to 0.1 metre wide. One of the better assays from this vein was 0.376 per cent copper, 30.0 grams per tonne silver, 0.031 per cent zinc, 0.010 per cent lead and 0.015 gram per tonne gold (Assessment Report 10742).

In 2000, Finlay Minerals Ltd. conducted induced polarization and magnetic geophysical surveys, geological mapping and soil and rock

CAPSULE GEOLOGY

sampling.

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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/20
DATE REVISED: 1992/01/20

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 120**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEW MESS 1**, NEW MESS, MESS,
MESS 1-4

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 03 46 N
LONGITUDE: 126 39 09 W
ELEVATION: 1600 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6326822
EASTING: 642349

COMMENTS: Drillholes 89-4 to 7 intersecting mineralized quartz veins in a major north-northwest striking shear zone, located 8.5 kilometres east of Duncan Lake, about 250 kilometres north of Smithers (Assessment Report 19789).

COMMODITIES: Silver Zinc Lead Copper Gold

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena Chalcopyrite
ASSOCIATED: Quartz Calcite Barite
ALTERATION TYPE: Argillic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 120 x 5 x 1 Metres STRIKE/DIP: 170/17W TREND/PLUNGE:
COMMENTS: Mineralization is hosted within a 120-metre long major north-northwest striking shear zone. A mineralized vein up to 1 metre wide within this zone strikes 170 degrees and dips 10 to 25 degrees west.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Undefined Formation	

LITHOLOGY: Andesite
Basalt
Augite Plagioclase Andesite Flow
Augite Plagioclase Andesite Breccia
Augite Plagioclase Basalt Flow
Augite Plagioclase Basalt Breccia
Welded Ash Flow
Lapilli Ash Tuff
Block Lapilli Tuff
Epiclastic

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Adoogacho Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Drill Core

<u>COMMODITY</u>	<u>GRADE</u>	
Silver	17.6000	Grams per tonne
Gold	0.4170	Grams per tonne
Copper	0.1293	Per cent
Lead	0.5072	Per cent
Zinc	1.0787	Per cent

COMMENTS: Sample taken from the interval 19.1 to 19.7 metres in drillhole 89-7.

REFERENCE: Assessment Report 19789.

CAPSULE GEOLOGY

The New Mess 1 prospect is located 8.5 kilometres east of Duncan Lake at the southern end of the Toodoggone gold camp, about 250 kilometres north of Smithers. The Kem prospect (094E 119) lies approximately 5.5 kilometres to the west-northwest of the New Mess 1 prospect. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The New Mess 1 prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by plutons and other bodies of the Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The geology of the area is separated into four, northwest-trending, fault-bound panels. The New Mess 1 prospect is underlain by the west-central panel, an up-faulted panel of regionally propylitic-altered Toodoggone volcanics in the south portion and Takla volcanics in the northern portion. A major north-northwest striking fault separates the hosting panel from structurally higher, zeolitized Toodoggone volcanics to the east. Takla Group volcanics are characterized by augite and plagioclase porphyry, basalt and andesite, flows and breccias. Lithologies of the Toodoggone Formation include reddish to mauve, variably welded ash-flow and lapilli-ash tuffs with subordinate block-lapilli tuff, epiclastics and rare andesitic lava flows interbedded with ash-flow tuffs (Bulletin 86). These rocks are propylitically altered with argillic overprinting.

Mineralization is of deep epithermal character, hosted in the Takla and Toodoggone volcanic assemblages (Adoogacho Member). The mineralization is associated with argillic-altered volcanics and brecciated quartz veins within a major north-northwest striking shear zone. One of the quartz veins exposed in trench 3 strikes 170 degrees and dips 10 to 25 degrees westerly and is bound by shearing and pyritic, argillic-altered gouge. The zone can be traced for 120 metres along the west side of a creek. Pyrite, sphalerite, galena, chalcocopyrite, barite and calcite comprise mineralization.

Drillhole 89-7 was drilled to test the mineralization intersected in trenches 3 and 4. A 0.6-metre section from this drillhole was analysed and yielded values of 17.6 grams per tonne silver, 1.0787 per cent zinc, 0.5072 per cent lead, 0.1293 per cent copper and 0.417 gram per tonne gold (Assessment Report 19789).

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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 903
REPORT: RGEN0100

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DATE CODED: 1992/01/23
DATE REVISED: 1992/01/23

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 121**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEW MESS 2**, NEW MESS, MESS,
MESS 1-4

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 04 13 N
LONGITUDE: 126 39 22 W
ELEVATION: 1780 Metres

NORTHING: 6327649
EASTING: 642102

LOCATION ACCURACY: Within 500M

COMMENTS: Location of Trench 9, exposing a quartz vein, located 8.5 kilometres east of Duncan Lake, about 250 kilometres north of Smithers (Assessment Report 19789).

COMMODITIES: Silver Gold Lead Zinc

MINERALS

SIGNIFICANT: Limonite
COMMENTS: No visible sulphides.
ASSOCIATED: Quartz Chalcedony Limonite Ankerite Barite
ALTERATION: Limonite
COMMENTS: Argillic overprinting is a regional characteristic. Manganese oxide is reported.

ALTERATION TYPE: Propylitic Argillic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: STRIKE/DIP: 310/39E
COMMENTS: Quartz vein up to 0.4 metre wide strikes 300 to 320 degrees and dips 38 to 40 degrees east (Assessment Report 19789).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Undefined Formation	

LITHOLOGY: Ash Flow
Andesite
Basalt
Lapilli Ash Tuff
Augite Plagioclase Porphyry
Block Lapilli Tuff
Epiclastic
Andesitic Lava Flow
Ash Flow Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N
CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1989
COMMODITY GRADE
Silver 43.8000 Grams per tonne
Gold 0.3330 Grams per tonne
Lead 0.1083 Per cent
Zinc 0.1311 Per cent

COMMENTS: Composite chip sample across 0.3 metre from a 20 to 30-centimetre wide low-sulphide quartz vein.
REFERENCE: Assessment Report 19789.

CAPSULE GEOLOGY

The New Mess 2 showing is located 8.5 kilometres east of Duncan

CAPSULE GEOLOGY

Lake at the southern end of the Toodoggone gold camp, about 250 kilometres north of Smithers. The Kem prospect (094E 119) lies approximately 5 kilometres to the west-northwest. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The showing occurs within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by plutons and other bodies of the Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The geology of the area is separated into four, northwest-trending, fault-bound panels. The New Mess 2 showing is underlain by the west-central panel, an up-faulted panel of regionally propylitic-altered Toodoggone volcanics in the south portion and the Takla volcanics in the northern portion. A major north-northwest striking fault separates the hosting panel from structurally higher, zeolitized Toodoggone volcanics to the east. Takla Group volcanics are characterized by augite and plagioclase porphyry, basalt and andesite flows and breccias. Lithologies of the Toodoggone Formation include reddish to mauve, variably welded ash-flow and lapilli-ash tuffs with subordinate block-lapilli tuff, epiclastics and rare andesitic lava flows interbedded with ash-flow tuffs (Bulletin 86). These rocks are propylitically altered with argillic overprinting.

Mineralization is of deep epithermal character, hosted in the Takla and Toodoggone volcanic assemblages. The mineralization consists of propylitic-altered volcanics hosting a low-sulphide quartz vein adjacent to a major north-northwest striking shear zone. The vein consists of white, vuggy, fine-grained quartz up to 0.4 metre wide, associated with a thin selvage of limonite-ankerite carbonate. The vein strikes 300 to 320 degrees and dips 38 to 40 degrees easterly.

Two samples were taken from this vein, neither containing visible sulphide mineralization. Sample M-89-TR9-01 consisted of a 0.3-metre composite sample taken across 20 to 30 centimetres of quartz, barite and manganese oxide vein. Analytical results from this sample were 43.8 grams per tonne silver, 0.1311 per cent zinc, 0.1083 per cent lead, 0.1004 per cent barite, 0.333 gram per tonne gold and 0.0048 per cent copper (Assessment Report 19789). A second sample, M-89-TR9-02, yielded 115.9 grams per tonne silver, 1.892 grams per tonne gold, 0.0912 per cent barite, 0.0652 per cent lead, 0.0406 per cent zinc and 0.0088 per cent copper (Assessment Report 19789). This sample of the vein exhibited predominantly banded chalcidonic quartz.

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GCNL #145, #147, #183, #192, 1984; #23(Feb.1), 1985; #165(Aug.27),

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RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 906
REPORT: RGEN0100

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WIN Vol. 1, #7, June 1987
WWW <http://www.infomine.com/>

DATE CODED: 1992/01/23
DATE REVISED: 1992/01/23

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 122**

NATIONAL MINERAL INVENTORY:

NAME(S): **WRICH 1**, WRICH 2, WRICH,
RICKY, GOAT, FINLAY RIVER,
SKARN, SKARN 1-4, CONCHA,
CONCHA 1-7, GRACE, GRACE 1-14,
ERROR, ERROR 1-8, JOK,
JOK 1-6

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 57 08 17 N
LONGITUDE: 126 46 49 W
ELEVATION: 1900 Metres

NORTHING: 6334945
EASTING: 634337

LOCATION ACCURACY: Within 500M

COMMENTS: Location of drillholes 1 and 2, intersecting two of four parallel mineralized quartz-calcite veins, about 250 kilometres north of Smithers (Assessment Report 18098).

COMMODITIES: Silver Zinc Lead Copper Molybdenum

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite Molybdenite
COMMENTS: Rare molybdenite.
ASSOCIATED: Quartz Calcite Chalcedony Carbonate
ALTERATION: Limonite Malachite Azurite
ALTERATION TYPE: Argillic Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Tabular
DIMENSION: 110 x 3 x 3 Metres STRIKE/DIP: 100/85 TREND/PLUNGE:
COMMENTS: Vein widths vary from 1 to 3 metres with a maximum individual strike length of 110 metres. The strike of the veins is 080 to 120 degrees dipping steeply to the north and south.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Lapilli Ash Tuff
Lapilli Block Tuff
Ash Flow
Lava Flow
Epiclastic
Quartz Porphyry Dike
Welded Dacitic Ash Flow
Porphyritic Augite Basalt
Basaltic Andesite Lava Flow
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Silver	94.5000	Grams per tonne
Copper	0.4920	Per cent
Lead	0.7289	Per cent
Zinc	9.9900	Per cent

COMMENTS: Drill core sample over the interval 44.96 to 47.96 metres from drillhole 2 on vein 4.

REFERENCE: Assessment Report 18098.

CAPSULE GEOLOGY

The Wrich 1 prospect is located 9.25 kilometres north of the Kemess North occurrence (094E 021) at the southern end of the Toodoggone gold camp. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The occurrence is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by plutons and other bodies of the Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The ground was originally explored on the basis of anomalous gold values in stream sediments and favourable geology.

Locally, the Wrich 1 prospect is underlain predominantly by lithologies of the Attycelley and Saunders members of the Toodoggone Formation. Nonwelded lapilli-ash tuff, subordinate lapilli-block tuff with interspersed ash flows and lava flows and interbedded epiclastics comprise lithologies of the Attycelley Member. The Saunders Member consists of partially welded, crystal-rich dacitic ash flows. To the southwest these rocks are in fault contact with Takla Group volcanics. Rocks of the Takla Group consist of generally massive, dark, coarse-grained porphyritic augite basalt, fine-grained aphyric basaltic andesite lava flows with subordinate interbeds of lapilli tuff and volcanic breccia (Bulletin 86). The major fault has a variable strike from 010 to 160 degrees and in turn is crosscut by a later fault striking 070 degrees, displacing stratigraphy approximately 15 metres.

Quartz veins are common in the Takla Group volcanics. The quartz is rarely amethystine and textures include cockscomb, massive and banded varieties. Propylitic and local clay alteration are associated with the veins.

A large gossan zone, approximately 1.3 kilometres southwest of the Wrich 2 prospect (094E 082), hosts veins containing up to 10 per cent combined copper, lead and zinc as chalcopryrite, galena, sphalerite, azurite and malachite (Assessment Report 10705). Anomalous silver values and rare molybdenite are associated with base metals.

Four parallel mineralized quartz-carbonate veins from this gossan zone were the target of a drill program in 1988. These four veins comprise the Wrich 1 prospect. The veins occur within a zone 165 metres wide by 280 metres long. Vein widths vary from 1 to 3.0 metres with a maximum individual strike length up to 110 metres. The strike of the veins is 080 to 120 degrees with steep dip to the north and south. Composition of the veins is white to grey quartz, chalcedonic quartz and open-space quartz and calcite. Sphalerite, galena, chalcopryrite and disseminated pyrite comprise sulphide mineralization. Malachite, azurite and limonite are locally abundant.

Of these four veins, veins 2 and 4 yielded the highest assays. Results from analyses of drill core is as follows: vein 2 analysed 65.31 grams per tonne silver, 8.9132 per cent zinc, 1.9394 per cent lead, 0.4348 per cent copper and 0.041 gram per tonne gold over the interval 81.55 to 82.55 metres from drillhole 1; vein 4 analysed 64.7 grams per tonne silver, 9.99 per cent zinc, 0.6821 per cent lead, 0.2463 per cent copper and 0.036 gram per tonne gold over the

CAPSULE GEOLOGY

interval 38.46 to 39.46 metres from drillhole 1, and (a second vein 4 sample) 94.5 grams per tonne silver, 9.99 per cent zinc, 0.7289 per cent lead, 0.4920 per cent copper and 0.019 gram per tonne gold over the interval 44.96 to 47.96 metres from drillhole 2 (Assessment Report 18098). Results from this drill program suggest that veins 2 and 4 are associated with a quartz-eye porphyry dike of probable Early Jurassic age (Toodoggone equivalent).

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/27
DATE REVISED: 1992/01/27

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 123**

NATIONAL MINERAL INVENTORY:

NAME(S): **RICH 1**, RICHY 1

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 08 23 N
LONGITUDE: 126 42 38 W
ELEVATION: 1880 Metres

NORTHING: 6335265
EASTING: 638542

LOCATION ACCURACY: Within 500M

COMMENTS: Location of rock sample GW-R-09, adjacent to a zone of strong northwesterly fracturing and shearing, located 12.5 kilometres east of the confluence of the Finlay and Firesteel rivers, about 250 kilometres north of Smithers (Assessment Report 13083).

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Malachite	Pyrite	Specularite
ASSOCIATED:	Quartz	Calcite	
ALTERATION:	Silica	Chlorite	Epidote
ALTERATION TYPE:	Silicific'n	Propylitic	Malachite
MINERALIZATION AGE:	Unknown		Oxidation

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Quartz Feldspar Porphyry Flow
Feldspar Hornblende Porphyry Flow
Andesitic Dike
Lapilli Ash Tuff
Lapilli Block Tuff
Ash Flow
Lava Flow
Epiclastic
Welded Dacitic Ash Flow
Dacite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

CAPSULE GEOLOGY

The Rich 1 showing is located 12.5 kilometres east of the confluence of the Finlay and Firesteel rivers at the southern end of the Toodoggone gold camp. The Toodoggone gold camp lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Rich 1 showing is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by plutons and other bodies of the Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinally strata.

Locally, the Rich 1 showing is underlain predominantly by

CAPSULE GEOLOGY

lithologies of the Attycelley and Saunders members of the Toadoggone Formation. Nonwelded lapilli-ash tuff, subordinate lapilli-block tuff with interspersed ash flows and lava flows and interbedded epiclastics comprise lithologies of the Attycelley Member. The Saunders Member consists of partially welded, crystal-rich dacitic ash flows (Bulletin 86). The primary unit underlying the Rich 1 showing is a flat-lying quartz feldspar porphyry flow. This unit is in turn underlain by a grey, chlorite-epidote altered feldspar hornblende porphyry flow. Several andesitic dikes cut this porphyry. Both of these units are cut by a series of weak shear zones, striking 096 to 098 degrees and dipping vertical. Hostrock lithologies are intensely fractured and moderately to intensely silicified.

Numerous quartz-calcite veins up to 2.5 centimetres wide randomly cut the shear zones. These veins are weakly mineralized with malachite, pyrite and specularite. Sample GW-R-09 from one of these veins assayed 1.5 grams per tonne silver and 0.013 gram per tonne gold (Assessment Report 13083).

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N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/27
DATE REVISED: 1992/07/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 124**

NATIONAL MINERAL INVENTORY:

NAME(S): **PEAK, PEAK 1, PEAK 2,
SWAN, SWAN 1, SWAN 2,
AU, AU 1, AU 2**

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6338921
EASTING: 635898

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W 094E02E
BC MAP:
LATITUDE: 57 10 24 N
LONGITUDE: 126 45 08 W
ELEVATION: 1170 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of rock sample R 6893 from gossan zone east of Finlay River and 6 kilometres due west of Giegerich Peak, about 270 kilometres north of Smithers (Assessment Report 17454).

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite Limonite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	Kemess Pluton
Lower Jurassic			
ISOTOPIC AGE: 207 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Hornblende			
Lower Jurassic			Black Lake Suite

LITHOLOGY: Gossan
Crystal Ash Tuff
Dacite Lapilli Tuff
Dacite
Andesitic Ash Flow Tuff
Andesite
Arkosic Sandstone
Siltstone
Quartz Monzonite
Granodiorite

HOSTROCK COMMENTS: The Kemess pluton is part of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 178.0000 Grams per tonne
Gold 1.3200 Grams per tonne

COMMENTS: Rock sample R 6893 of limonite-altered ash tuffs within a gossan.
REFERENCE: Assesment Report 17454.

CAPSULE GEOLOGY

The Peak showing is located east of Finlay River and 6 kilometres due west of Giegerich Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The showing is at the southern end of the Toodoggone gold camp which lies within the

CAPSULE GEOLOGY

eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Peak showing is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by plutons and other bodies of the Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Peak showing is underlain by Toodoggone Formation volcanics near a contact with quartz monzonite to granodiorite of the Black Lake Suite. Toodoggone volcanics consist of pinkish, massive crystal ash tuff locally with trace to 2 per cent disseminated pyrite. Lesser arkosic sandstone, siltstone, conglomerate and epiclastic slide debris also comprise Toodoggone lithologies underlying the Peak showing. A kilometre to the north of the showing, bedding in this unit strikes 175 degrees and dips 20 degrees to the west. To the west, well-jointed dacite lapilli tuffs and andesitic ash-flow tuffs also comprise Toodoggone volcanics.

Several limonitic gossans with limonite after pyrite and finely disseminated pyrite occur in the area. A rock sample from one of these gossans analysed 178.0 grams per tonne silver, 1.32 grams per tonne gold, 0.0622 per cent zinc, 0.0326 per cent lead and 0.0023 per cent copper (Assessment Report 17454). A geophysical survey was conducted in 1988, consisting of airborne magnetic and VLF electromagnetic surveys. The results of these surveys indicates further limonitic gossan zones, more extensive faulting and a probable area of hydrothermal alteration.

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- N MINER MAG March 1988, p. 1
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- IPDM Nov/Dec 1983
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- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/30
DATE REVISED: 1992/07/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 125**

NATIONAL MINERAL INVENTORY:

NAME(S): **ELECTRUM**, GRACE, GRACE 5,
GRACE 1-5, GRACE 1-14, CONCHA,
CONCHA 1-7, ERROR, ERROR 1-8,
JOK, JOK 1-6, FINLAY RIVER,
SKARN, SKARN 1-4, VIP,
VIP 1-40

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 11 15 N
LONGITUDE: 126 49 39 W
ELEVATION: 1135 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Electrum prospect, west of the Finlay River and 5.7 kilometres east-southeast of Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 18313).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6340350
EASTING: 631297

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Argentite Electrum Pyrite
ASSOCIATED: Chalcedony Calcite Hematite Jasper
ALTERATION: Chlorite Epidote
COMMENTS: The veins and breccias are surrounded by up to 4 metres of intensely bleached and argillic-altered wallrock (Assessment Report 18313).
ALTERATION TYPE: Argillic Propylitic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 60 x 50 x 2 Metres STRIKE/DIP: 325/70E TREND/PLUNGE:
COMMENTS: Mineralized shoots strike 325 degrees and dip 60 to 80 degrees east. The mineralized zone is estimated from section and plan diagrams (Assessment Report 18313).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Andesite Crystal Tuff
Crystal Lapilli Tuff
Andesite
Hematitic Ash Tuff
Crystal Tuff
Andesitic Flow
Quartz Monzonite
Granodiorite
Volcanic Tuff
Chalcedony Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Silver	459.6200	Grams per tonne
Gold	4.9390	Grams per tonne

COMMENTS: Assay results are from drillhole 88-16 over a 2.6-metre interval.
REFERENCE: Assesment Report 18313.

CAPSULE GEOLOGY

The Electrum prospect is located west of Finlay River and 5.75 kilometres east-southeast of Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The prospect is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Electrum prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Electrum prospect is underlain by Toodoggone Formation grey, orange and green andesite, and quartz-eye andesite crystal and crystal lapilli tuff. The contact between these two units is faulted. Lesser red, hematitic ash-fall tuffs interbedded with crystal tuffs also occur. These are variably chlorite and epidote altered. To the southeast, outcrops consist of Takla Group andesitic flows and volcanic tuff. The quartz monzonite to granodiorite Black Lake stock lies immediately to the west and intrudes Takla Group volcanics.

The mineralization consists of chalcedony breccia and fracture-controlled veinlets with minor amounts of argentite, electrum and less than 1 per cent pyrite. Calcite is abundant as fracture filling and vein centres. The chalcedony is banded; hematite and jasper are also present within the chalcedony matrix. The veins and breccia zones are surrounded by up to 4 metres of intensely bleached and argillic-altered wallrock. Drilling results indicate that the electrum and argentite is predominantly within hangingwall shoots, and lesser within footwall shoots, striking 325 degrees and dipping 60 to 80 degrees to the northeast. Shoots appear to converge to the southeast. The footwall shoot consists of rounded rebrecciated chalcedony fragments in a gouge-like silicified matrix and has a faulted contact with unaltered rock below. The hangingwall shoot is cut off by welded tuff.

In 1988, a drill program consisting of 17 holes was conducted on the Electrum prospect. Assay results from drill core range from 24.70 grams per tonne silver over 2 metres to 852.70 grams per tonne silver over 0.3 metre, and 0.172 gram per tonne gold over 1 metre to 10.153 grams per tonne gold over 0.3 metre (Assessment Report 18313). Drillhole 88-16 yielded the best values overall, with a 2.6-metre interval grading 459.62 grams per tonne silver and 4.939 grams per tonne gold (Assessment Report 18313).

A total of 9 additional percussion drillholes were drilled during a 1989 drill program; 7 to the northwest and 2 to the southeast. Assay results from the drillholes to the northwest indicated an extension of the Electrum prospect mineralization. Sample APH-75 170-180 assayed 18.2 grams per tonne silver and 0.209 gram per tonne gold while sample APH-80 10-20 assayed 4.9 grams per tonne silver and 1.03 grams per tonne gold over a 10-metre interval (Assessment Report 18856).

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W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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12), 1985; #23(Feb.1); #111(June 11); #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/01/31
DATE REVISED: 1992/01/31

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **BELLE NORTH**, BELLE, BELLE 1-2,
JD

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 25 29 N
LONGITUDE: 127 08 37 W
ELEVATION: 1930 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: A quartz-barite vein exposed in Trench I (Assessment Report 12966).
The prospect is located near the summit of a 1946-metre high peak,
3.4 kilometres northeast of Kadah Lake and 7.25 kilometres northwest
of the confluence of McClair Creek with the Toodoggone River.
Smithers is located 310 kilometres to the south.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6366188
EASTING: 611476

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Unknown
COMMENTS: No mineralization was noted in nine hand trenches or in surface
exposure.

ASSOCIATED: Quartz Barite

ALTERATION: Silica Clay

ALTERATION TYPE: Silicific'n Argillic Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Breccia
CLASSIFICATION: Epithermal Epigenetic

TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 450 x 2 Metres STRIKE/DIP: 320/65N TREND/PLUNGE:

COMMENTS: The quartz-barite vein comprising the Belle North prospect is 450
metres long by 0.75 to 1.8 metres wide, strikes 300 to 339 degrees and
dips 60 to 70 degrees north (Assessment Report 12996).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Crystal Tuff
Trachyte Porphyry
Trachyte
Heterolithic Crystal Tuff
Heterolithic Block Tuff
Andesite Flow
Andesite
Dike
Mudstone
Conglomerate

HOSTROCK COMMENTS: The age of the McClair Member of the Toodoggone Formation is between
197 and 193.8 Ma (ages of the enclosing stratigraphy).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1984

SAMPLE TYPE: Channel

COMMODITY

GRADE

Silver 10.5000 Grams per tonne

Gold 1.2000 Grams per tonne

COMMENTS: A trench channel-sample taken over a 1-metre interval (2 to 3 metres).

REFERENCE: Assessment Report 12996.

CAPSULE GEOLOGY

The Belle North prospect is located near the summit of a 1946-metre high peak, 3.4 kilometres northeast of Kadah Lake and 7.25 kilometres northwest of the confluence of McClair Creek with the Toodoggone River. The prospect is 310 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by plutons and other intrusions of the Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Belle North prospect is underlain by volcanics of the McClair Member of the Toodoggone Formation. They consist mainly of green crystal tuffs (Assessment Report 10347) and greenish trachyte porphyry (Assessment Report 12966). They are described by Diakow, as heterogeneous lapilli and block tuff, andesitic flows, and numerous cogenetic dikes and subvolcanic plugs; minor mudstone and conglomerate (Bulletin 86, in press). Cutting these rocks are four well developed north-northeasterly striking fracture zones accompanied by variable degrees of silicification ranging from 1 to 32 metres wide.

The prospect consists of a quartz-barite vein structure. Its strike is 300 to 339 degrees and its dip 60 to 70 degrees north. The surface trace of this zone is roughly 450 metres long along strike and variable in width from 0.75 to 1.8 metres (Assessment Report 12966).

No mineralization was noted in nine hand trenches or in surface exposures of the vein. Solid bedrock was rarely reached but when intersected consisted of highly fractured, broken and weathered rock. Vein material, generally leached quartz-barite mud and rarely barite-rich quartz breccia, was exposed in varying degrees in all trenches.

Selective channel samples were taken from all nine trenches. Trench 9 yielded consistently high anomalous gold and silver. A channel sample taken from 2 to 3 metres analysed 1.2 grams per tonne gold and 10.5 grams per tonne silver (Assessment Report 12966).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
EMPR GEM 1969-103; 1971-63-71; 1973-456-463
EMPR GEOLOGY 1977-1981, pp. 156-161
EMPR MAP 61 (1985)
EMPR PF (Photogeologic Interpretation Map of the Northern Omineca
area, Oct. 1964, Canadian Superior Exploration Limited-in 94E
General File)
GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
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GCNL #189(Sept.29), 1983; #195(Oct.10), 1984; #28(Feb.28); #71(April
12), 1985; #23(Feb.1); #111(June 11); #165(Aug.27), 1986
IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 919
REPORT: RGEN0100

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DATE CODED: 1992/10/07
DATE REVISED: 1992/10/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 127**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKARN 2**, SKARN 1-4, WRICH,
WRICH 1, WRICH 2, RICKY,
FINLAY RIVER, GOAT, CONCHA,
CONCHA 1-7, GRACE, GRACE 1-14,
ERROR 1-8, JOK, JOK 1-6

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 08 41 N
LONGITUDE: 126 48 05 W
ELEVATION: 1500 Metres

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6335627
EASTING: 633022

LOCATION ACCURACY: Within 500M
COMMENTS: Location of quartz vein hosted in a hypabyssal quartz feldspar porphyry dike, about 275 kilometres north of Smithers (Assessment Report 18396).

COMMODITIES: Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Unknown
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Quartz Feldspar Porphyry Dike
Augite Porphyry Basalt Flow
Augite Porphyry Basalt Breccia
Limestone
Andesite
Basalt
Dacitic Andesitic Crystal Tuff
Dacitic Andesitic Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1989
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Silver	75.9000 Grams per tonne
Copper	0.9650 Per cent
Lead	3.3280 Per cent
Zinc	2.2580 Per cent

COMMENTS: Sample Q 7612.
REFERENCE: Assessment Report 18396.

CAPSULE GEOLOGY

The Skarn 2 showing is located 10.25 kilometres north-northwest of the Kemess North prospect (094E 021) in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The showing is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Skarn 2 showing is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and

CAPSULE GEOLOGY

to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Skarn 2 showing is underlain by Takla Group volcanic rocks, consisting of dark green augite porphyry basalt flows and breccias, and lesser fine-grained andesite and basalt with associated sediments. To the west approximately 1 kilometre, a thrust fault juxtaposes Takla volcanics onto structurally underlying Toodoggone Formation volcanic rocks. Dacitic to andesitic crystal-ash tuffs and flows comprise Toodoggone volcanics.

A quartz vein is hosted in a hypabyssal quartz feldspar porphyry dike. The dike may be a hypabyssal equivalent of the Toodoggone volcanics. A lens of recrystallized limestone crops out 75 metres west of the showing.

Several samples were taken from this vein which yielded anomalous silver, copper, lead and zinc. Sample Q 7612 assayed 75.9 grams per tonne silver, 3.328 per cent lead, 2.258 per cent zinc and 0.965 per cent copper (Assessment Report 18396).

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N MINER MAG March 1988, p. 1
GCNL #189(Sept.29), 1983; #195(Oct.10), 1984; #28(Feb.28); #71(April
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/06
DATE REVISED: 1992/07/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 128**

NATIONAL MINERAL INVENTORY:

NAME(S): **MINA DE RAY**, GRACE, GRACE 5,
GRACE 1-5, GRACE 1-14, CONCHA,
CONCHA 1-7, ERROR, ERROR 1-8,
JOK, JOK 1-6, FINLAY RIVER,
SKARN, SKARN 1-4, VIP,
VIP 1-40

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 57 10 54 N
LONGITUDE: 126 50 25 W
ELEVATION: 1150 Metres

NORTHING: 6339677
EASTING: 630546

LOCATION ACCURACY: Within 500M

COMMENTS: Banded quartz-chalcedony breccia hosted in quartz andesite crystal tuffs, located west of Finlay River and 5.2 kilometres east-southeast of Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 18856).

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Unknown
ASSOCIATED: Quartz Chalcedony
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 5 Metres STRIKE/DIP: 140/85E TREND/PLUNGE:
COMMENTS: A quartz-chalcedony breccia zone strikes 140 degrees, dips steeply to the east and has an average width of 5 metres.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Andesite Crystal Tuff
Andesite
Quartz Chalcedony Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Silver 51.5000 Grams per tonne
Gold 1.0300 Grams per tonne

COMMENTS: Sample from drillhole APH-71 over the 160 to 170-metre interval.
REFERENCE: Assessment Report 18856.

CAPSULE GEOLOGY

The Mina De Ray prospect is located west of Finlay River and 5.25 kilometres east-southeast of Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The occurrence is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The prospect occurs within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with

CAPSULE GEOLOGY

Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Mina De Ray prospect is underlain by Toodoggone Formation andesite crystal tuff and hosts a banded quartz-chalcedony breccia zone striking 140 degrees and dipping steeply to the east. The average width of this zone is 5 metres.

Five drillholes were drilled in 1989. Several holes were not drilled deep enough to intersect the breccia zone. Drillholes APH-70 to 72 intersected anomalous silver and gold mineralization. The best assay values were from drillhole APH-71 at the 160 to 170-metre interval where a sample yielded 51.5 grams per tonne silver and 1.03 grams per tonne gold (Assessment Report 18856).

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12), 1985; #23(Feb.1); #111(June 11); #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/06
DATE REVISED: 1992/07/13

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 129**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRACE 1**, GRACE, GRACE 1-14,
GRACE 1-5, VIP, VIP 1-40,
FINLAY RIVER, CONCHA, CONCHA 1-7,
SKARN, SKARN 1-8, JOK,
JOK 1-6

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

LATITUDE: 57 10 21 N
LONGITUDE: 126 51 47 W
ELEVATION: 1205 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of drillholes 83-1 and 2 intersecting skarn mineralization, approximately 12.8 kilometres north of Thutade Lake between Finlay River and Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 13057).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6338613
EASTING: 629201

COMMODITIES: Silver Gold Copper Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Sphalerite Pyrite
ASSOCIATED: Garnet Jasper Magnetite Epidote Chlorite
ALTERATION: Specularite
Garnet Jasper Magnetite Diopside Epidote
Chlorite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stockwork
CLASSIFICATION: Skarn
TYPE: K03 Fe skarn
DIMENSION: 125 x 35 x 15 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Skarn zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Permian	Asitka	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Limestone
Granodiorite
Marble
Micaceous Meta Siltstone
Limestone Conglomerate
Skarn
Porphyritic Monzonite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1984

COMMODITY	GRADE	
Silver	112.1100	Grams per tonne
Gold	0.3270	Grams per tonne
Copper	0.5150	Per cent
Zinc	0.0790	Per cent

COMMENTS: Grades are weighted average values from drillhole 83-1 over three intervals totalling 5.029 metres.

REFERENCE: Assessment Report 13057.

CAPSULE GEOLOGY

The Grace 1 prospect is located approximately 12.8 kilometres north of Thutade Lake between Finlay River and Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The prospect is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Grace 1 prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Grace 1 prospect is underlain predominantly by granodiorite of the Black Lake stock with several roof pendants of grey micaceous metasilstone and white, coarsely crystalline marble of the Asitka and/or Takla groups. Late porphyritic monzonite dikes strike northwest, intruding both granodiorite and metasedimentary rocks.

An irregular east-trending lens of limestone, approximately 195 metres long by 65 metres wide, and adjacent metasilstones and limestone conglomerates host numerous skarn outcrops comprising the Grace 1 prospect. Skarn mineralization consists of up to 50 per cent massive garnet and banded jasper, 5 to 60 per cent magnetite, up to 3 per cent specularite with variable amounts of epidote and chlorite. The mineralization usually varies from epidote-rich to diopside-garnet-magnetite rich skarn in the core areas. Chalcopyrite (1 to 3 per cent), sphalerite and cubic pyrite (1 per cent) occur as disseminations and fracture fillings throughout skarn areas.

Two drillholes were drilled in 1984 on a skarn zone situated between an east-trending limestone body, measuring 145-metres long by up to 45-metres wide to the north, and granodiorite to the south. The skarn zone is at least 125-metres long by 25 to 45-metres wide by 15-metres thick. Assay results from drill core yielded anomalous silver, gold and copper. The best results were over a 5.029-metre long section from three intervals in drillhole 83-1. Weighted average values over this section were 112.11 grams per tonne silver, 0.515 per cent copper, 0.327 gram per tonne gold and 0.079 per cent zinc (Assessment Report 13057).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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18313, 18856
EMPR PF (Photogeologic Interpretation Map of the Northern Omineca
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 926
REPORT: RGEN0100

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N MINER October 13, 1986
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#111(June 11); #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/12
DATE REVISED: 1992/07/14

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 130**

NATIONAL MINERAL INVENTORY:

NAME(S): **BELLE** BELLE 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 24 46 N
LONGITUDE: 127 06 14 W
ELEVATION: 1255 Metres

NORTHING: 6364924
EASTING: 613898

LOCATION ACCURACY: Within 500M

COMMENTS: Location of three samples (DT6, DT8 and DT14) taken from fractured zone cropping out in McClair Creek, 4.4 kilometres above its confluence with the Toodoggone River (Assessment Report 10347). Smithers is located 310 kilometres to the south.

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
COMMENTS: No significant sulphide mineralization was observed other than disseminated pyrite (Assessment Report 12966).

ASSOCIATED: Quartz

ALTERATION: Silica Pyrite Epidote Calcite

ALTERATION TYPE: Silicific'n Propylitic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Disseminated

CLASSIFICATION: Epigenetic Hydrothermal

COMMENTS: The Belle showing consists of a series of shear or fracture zones trending north-northeasterly with associated propylitic alteration, silicification and pyrite (Assessment Report 12966).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Toodoggone	Unnamed/Unknown Informal
Jurassic			

LITHOLOGY: Dacite Porphyry Flow
Dacite
Rhyolitic Tuff
Rhyolite
Syenite Porphyry Dike
Agglomerate
Lapilli Tuff
Andesite
Granodiorite
Quartz Diorite

HOSTROCK COMMENTS: The age of the McClair Member is about 195 Ma and the intrusive stock immediately to the east is Early to Middle Jurassic (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1982

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

3.1000

Grams per tonne

Gold

0.5900

Grams per tonne

COMMENTS: Sample DT14 for the gold value and DT6 for the silver value.

REFERENCE: Assessment Report 10347.

CAPSULE GEOLOGY

The Belle showing is located along McClair Creek, 4.4 kilometres above its confluence with the Toodoggone River (Assessment Report 10347). The prospect is 310 kilometres north of Smithers. It lies

CAPSULE GEOLOGY

within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply-dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high-angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Belle showing is underlain by volcanics of the McClair Member of the Toodoggone Formation. They consist mainly of altered and non-altered dacitic porphyry flows, rhyolitic tuff and rhyolite which are repeatedly intruded by northwest-trending syenite porphyry dikes (Assessment Report 12966). In several locations thin beds of agglomerate crop out and appear to be intercalated with the flows (Assessment Report 12966). The Toodoggone volcanics at the Belle showing are described by Diakow, as heterogeneous lapilli and block tuff, andesitic flows, and numerous cogenetic dikes and subvolcanic plugs. These volcanics are in fault contact with a Jurassic, porphyritic, granodiorite to quartz diorite stock, immediately to the east.

The showing consists of a series of en-echelon north-northeast-trending shears and fracture zones. Where these zones show intense shearing, they are commonly accompanied with intense silicification, moderate epidote alteration and contain disseminated pyrite (Assessment Report 12966). No other sulphide mineralization was noted.

Three rock samples taken from this showing were anomalous in gold and silver. Sample DT14 analysed 3.1 grams per tonne silver and sample DT6 analysed 0.59 gram per tonne gold (Assessment Report 10347).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 929
REPORT: RGEN0100

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DATE CODED: 1992/10/07
DATE REVISED: 1992/10/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 131**

NATIONAL MINERAL INVENTORY:

NAME(S): **CONCHA 31**, CONCHA, CONCHA 1-7,
GRACE, GRACE 1-14, GRACE 1-5,
VIP, VIP 1-40, SKARN,
SKARN 1-8, WRICH, WRICH 1-2,
JOK, JOK 1-6, FINLAY RIVER

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6337826
EASTING: 630722

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 09 54 N
LONGITUDE: 126 50 18 W
ELEVATION: 1130 Metres

LOCATION ACCURACY: Within 500M
COMMENTS: Massive chalcopyrite and pyrite in a quartz gangue over a 1 metre width, located approximately 10.5 kilometres north of Thutade Lake and 6.5 kilometres southeast of Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 17459).

COMMODITIES: Silver Gold Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 50 x 1 Metres STRIKE/DIP: 093/22S TREND/PLUNGE:
COMMENTS: Massive chalcopyrite and pyrite mineralization are hosted in quartz gangue over a strike length of 50 metres and 1 metre width. The zone strikes 093 degrees and dips 022 degrees south.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 189 +/- 6 Ma		
	DATING METHOD: Potassium/Argon		
	MATERIAL DATED: Hornblende		
Lower Jurassic			Black Lake Stock
	ISOTOPIC AGE: 204 +/- 9 Ma		
	DATING METHOD: Potassium/Argon		
	MATERIAL DATED: Hornblende		

LITHOLOGY: Andesitic Lapilli Tuff
Andesite
Crystal Ash Tuff
Crystal Ash Flow
Andesitic Tuff
Agglomerate
Granodiorite

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Attycelley Member. The Black Lake stock of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Silver	92.9000	Grams per tonne
Gold	0.5800	Grams per tonne
Copper	0.6579	Per cent

COMMENTS: Sample E-10507; the best of two samples from this location.
REFERENCE: Assessment Report 17459.

CAPSULE GEOLOGY

The Concha 31 prospect is located approximately 10.5 kilometres north of Thutade Lake and 6.5 kilometres southeast of Drybrough Peak. The prospect crops out on the east side of the Finlay River in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The prospect is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Concha 31 prospect is situated within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Takla Group dark green andesitic lapilli tuffs with trace pyrite and locally thin-bedded andesitic tuffs, striking 120 to 135 degrees and dipping 73 to 82 degrees north, underlie the Concha 31 prospect. Takla volcanics are variably chlorite and epidote altered. The contact between the Takla Group volcanics and the Toodoggone Formation volcanics lies less than 1 kilometre to the east. Toodoggone volcanics consist of crystal ash tuffs and flows with lesser agglomerates. Granodiorite of the Black Lake stock lies less than 1 kilometre to the west.

Massive chalcopyrite and pyrite occur within a quartz gangue over a 1 metre width. The zone strikes 093 degrees and dips 22 degrees to the south. Mineralized outcrop can be traced for 50 metres along strike where it disappears into the west bank of the Finlay River and under overburden to the southeast.

Two rock samples were taken from this mineralized zone in 1988. The better of the two samples yielded assay values of 92.9 grams per tonne silver, 0.58 gram per tonne gold, 0.6579 per cent copper, 0.0798 per cent zinc and 0.0584 per cent lead (Assessment Report 17459).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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18313, 18856
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GSC OF 306; 483
GSC P 80-1A, pp. 27-32
W MINER April, 1982

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 932
REPORT: RGEN0100

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GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/13
DATE REVISED: 1992/07/14

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 132**

NATIONAL MINERAL INVENTORY:

NAME(S): **CONCHA 32**, CONCHA, CONCHA 1-7,
GRACE, GRACE 1-14, GRACE 1-5,
VIP, VIP 1-40, SKARN,
SKARN 1-8, WRICH, WRICH 1-2,
JOK, JOK 1-6, FINLAY RIVER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

LATITUDE: 57 10 08 N
LONGITUDE: 126 49 53 W
ELEVATION: 1140 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: A series of 9 quartz-carbonate veins over 2 metres wide, located approximately 10.5 kilometres north of Thutade Lake and 6.5 kilometres southeast of Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 17459).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6338272
EASTING: 631128

COMMODITIES: Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Galena Chalcopyrite Sphalerite Pyrite
ASSOCIATED: Quartz Carbonate Pyrite
ALTERATION: Epidote Chlorite
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION:
COMMENTS: Nine separate quartz-carbonate veins up to 20 centimetres wide in a zone 2 metres wide strike 040 degrees and dip 70 degrees east (Assessment Report 17459).
STRIKE/DIP: 040/70E TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 189 +/- 6 Ma		
	DATING METHOD: Potassium/Argon		
	MATERIAL DATED: Hornblende		
Lower Jurassic			Black Lake Stock
	ISOTOPIC AGE: 207 +/- 7 Ma		
	DATING METHOD: Potassium/Argon		
	MATERIAL DATED: Hornblende		

LITHOLOGY: Andesitic Lapilli Tuff
Andesitic Tuff
Andesite
Crystal Ash Tuff
Crystal Ash Flow
Agglomerate
Granodiorite

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Attycelley Member. Black Lake stock of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Silver	6.1000	Grams per tonne
Copper	0.0262	Per cent
Lead	0.8996	Per cent
Zinc	1.4830	Per cent

COMMENTS: Sample E-10511; one of two samples from this vein system.
REFERENCE: Assessment Report 17459.

CAPSULE GEOLOGY

The Concha 32 showing is located approximately 10.5 kilometres north of Thutade Lake and 6.5 kilometres southeast of Drybrough Peak.

The showing crops out on the east side of the Finlay River in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The occurrence is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The showing occurs within a Mesozoic volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Takla Group dark green andesitic lapilli tuffs with trace pyrite and locally thin-bedded andesitic tuffs, striking 120 to 135 degrees and dipping 73 to 82 degrees north, underlie the Concha 32 showing. Takla volcanics are variably chlorite and epidote altered. The contact between the Takla Group volcanics and the Toodoggone Formation volcanics lies less than 1 kilometre to the east. Toodoggone volcanics consist of crystal ash tuffs and flows with lesser agglomerates. Granodiorite of the Black Lake stock (of the Black Suite) lies less than 1 kilometre to the west.

Nine separate quartz-carbonate veins crop out over a 2 metres width. Individual veins are narrow, the widest being 10 to 20 centimetres wide, and striking 040 degrees and dipping 70 degrees east. Mineralization in these veins consists of galena with lesser chalcocopyrite, sphalerite and pyrite.

Two samples were taken from this group of veins. Assay results from both yielded anomalous base and precious metals values. Sample R-6804 assayed 27.3 grams per tonne silver, 0.310 gram per tonne gold, 1.026 per cent copper, 0.0063 per cent zinc and trace lead. Sample E-10511 assayed 6.1 grams per tonne silver, 1.483 per cent zinc, 0.8996 per cent lead, 0.0262 per cent copper and trace gold (Assessment Report 17459).

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GSC BULL 270
GSC OF 306; 483

RUN DATE: 26-Jun-2003
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MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 935
REPORT: RGEN0100

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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/13
DATE REVISED: 1992/07/14

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 133**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLDEN RING 2**, GOLDEN RING, GOTCHA,
 DRY 3, DRY 5, DRY 6,
 DRY

MINING DIVISION: Omineca
 UTM ZONE: 09 (NAD 83)
 NORTHING: 6344489
 EASTING: 627120

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094E02W
 BC MAP:
 LATITUDE: 57 13 33 N
 LONGITUDE: 126 53 40 W
 ELEVATION: 1900 Metres
 LOCATION ACCURACY: Within 500M
 COMMENTS: Quartz vein stockwork with disseminated galena and pyrite, located approximately 3 kilometres northeast of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 13855).

COMMODITIES: Silver Lead Zinc Gold

MINERALS

SIGNIFICANT: Galena Pyrite
 ASSOCIATED: Quartz
 ALTERATION TYPE: Oxidation
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
 CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Crystal Tuff
 Quartz Feldspar Tuff
 Gossan

HOSTROCK COMMENTS: Takla Group volcanics crop out 0.5 kilometre to the west. The Black Lake stock crops out 2 kilometres to the west.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
 TERRANE: Stikine
 METAMORPHIC TYPE: Regional RELATIONSHIP:
 GRADE: Greenschist
 Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
 YEAR: 1985
 CATEGORY: Assay/analysis
 SAMPLE TYPE: Chip
 COMMODITY GRADE

Silver	34.0000	Grams per tonne
Gold	0.3800	Grams per tonne
Lead	5.1000	Per cent
Zinc	0.1380	Per cent

COMMENTS: Two-metre chip sample.
 REFERENCE: Assessment Report 13855.

CAPSULE GEOLOGY

The Golden Ring 2 showing is located 3 kilometres northeast of Drybrough Peak, approximately 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Golden Ring 2 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake

CAPSULE GEOLOGY

Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Golden Ring 2 showing is underlain by Toodoggone Formation volcanic rocks consisting of an assemblage of maroon to grey-green crystal tuffs and an orange-weathering quartz-eye feldspar tuff unit.

Rock chip samples were taken from one of several gossans in the area along a prominent ridge. A stockwork consisting of quartz veins less than 1 centimetre wide, hosts disseminated galena and pyrite. Assay results from a rock chip sample over 2 metres of this mineralization yielded 34.0 grams per tonne silver, 5.1 per cent lead, 0.138 per cent zinc, 0.0150 per cent copper and 0.38 gram per tonne gold (Assessment Report 13855). A second chip sample over 3 metres, taken 12 metres away, assayed 3.4 grams per tonne silver (Assessment Report 13855).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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GSC BULL 270
GSC OF 306; 483
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W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/14
DATE REVISED: 1992/07/14

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 134**

NATIONAL MINERAL INVENTORY:

NAME(S): **STAR 1**, STAR, ACA,
PUL, CO, SUN,
ACAPULCO GROUP

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6340743
EASTING: 622969

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 11 36 N
LONGITUDE: 126 57 54 W
ELEVATION: 1535 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: Four drillholes intersect a near-vertical dipping magnetite-chalcocopyrite skarn up to 12 metres thick, located approximately 3 kilometres southwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 16463).

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcocopyrite
ASSOCIATED: Magnetite Garnet Diopside Epidote Chlorite
Wollastonite Actinolite Calcite
ALTERATION: Garnet Diopside Epidote Chlorite Wollastonite
Magnetite Actinolite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive
CLASSIFICATION: Skarn
TYPE: K03 Fe skarn
DIMENSION: 1200 x 300 x 12 Metres STRIKE/DIP: 360/90 TREND/PLUNGE:
COMMENTS: A skarn zone has been mapped as being 1200 metres long by 300 metres wide; drillholes indicate skarn zones are up to 12 metres thick, with near vertical dips.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Limestone
Andesitic Volcanic
Andesite
Quartz Diorite
Quartz Monzonite
Skarn

HOSTROCK COMMENTS: The Black Lake stock of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite
COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Silver 93.6000 Grams per tonne
Gold 1.8700 Grams per tonne
Copper 2.6700 Per cent
COMMENTS: Drillhole number and interval for grades are not reported.
REFERENCE: Assessment Report 16463.

CAPSULE GEOLOGY

The Star 1 prospect is located approximately 3 kilometres southwest of Drybrough Peak, some 280 kilometres north of Smithers. The Star 1 prospect lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Star 1 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Star 1 prospect is underlain by Asitka Group limestones and the Black Lake stock (part of the Black Lake Suite). Lithologies of the Asitka Group consist mainly of recrystallized limestone with minor interbeds of andesitic volcanics. The Black Lake stock at this location consists of quartz diorite to quartz monzonite with minor porphyritic phases. Skarns, consisting mainly of magnetite, chalcopyrite, diopside, epidote, grossular garnet and minor wollastonite are present at the limestone-intrusive contact. Propylitic alteration consisting of chlorite and epidote envelope calcite fractures in the volcanics adjacent to and in the intrusion. Potassic alteration occurs along abundant fractures within the quartz monzonite phase of the intrusion.

The skarn zone has been mapped as being 1200 metres long by 300 metres wide. A magnetic field high located over a hand trench dug in 1982 along the intrusive-limestone contact within this zone was used as a target for drilling during 1987 property exploration. It was expected that magnetite-chalcopyrite skarn mineralization exposed in the trench would continue at depth. Mineralization occurs as a near vertical zone with intersections of up to 12 metres thick. Four holes were drilled from this location. Holes 87-A1 and 87-A2 intersected magnetite skarn at a depth of 130 and 40 metres respectively. Hole 87-A3 intersected two magnetite skarn zones up to 12 metres thick. Hole 87-A4 intersected epidote-magnetite skarn. Hole 87-A5 was drilled from a location 80 metres to the south, which intersected a silicate skarn consisting of actinolite, diopside, epidote and minor magnetite.

Assay results of a magnetite skarn sample from drillholes 87-A1 to 87-A4 were anomalous in copper, gold and silver. The values were up to 2.67 per cent copper, 1.87 grams per tonne gold and 93.60 grams per tonne silver (Assessment Report 16463). The silicate skarn intersected in drillhole 87-A5 analysed lower gold and silver, but one sample assayed 13.20 grams per tonne gold and 243.1 grams per tonne silver (Assessment Report 16463).

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GSC OF 306; 483
GSC P 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 940
REPORT: RGEN0100

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MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/17
DATE REVISED: 1992/02/17

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 135**

NATIONAL MINERAL INVENTORY:

NAME(S): **STAR 2**, STAR, ACA,
PUL, CO, SUN,
ACAPULCO GROUP

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6341559
EASTING: 623348

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 12 02 N
LONGITUDE: 126 57 30 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Area of skarn, located approximately 3 kilometres southwest of
Drybrough Peak, about 280 kilometres north of Smithers (Assessment
Reports 11106, 14025).

COMMODITIES: Silver Gold Lead Copper Zinc

MINERALS

SIGNIFICANT: Galena Chalcopyrite Sphalerite Bornite Pyrite
Pyrrhotite
COMMENTS: Skarn mineralogy is galena and chalcopyrite (Assessment Report 11106).
Vein mineralogy is galena, sphalerite and pyrite (Assessment Report
14025).
ASSOCIATED: Magnetite Garnet Diopside Wollastonite Calcite
ALTERATION: Garnet Diopside Wollastonite Calcite Malachite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Skarn Hydrothermal
TYPE: K02 Pb-Zn skarn
DIMENSION: 50 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralized skarn exposed in outcrop is mapped as being approximately
50 metres in diameter (Assessment Report 11106).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Limestone
Chlorite Schist
Andesitic Volcanic
Andesite
Quartz Diorite
Quartz Monzonite
Skarn
Hornblende Pyroxene Gabbro
Biotite Porphyry Andesite Dike

HOSTROCK COMMENTS: The Black Lake stock is part of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite
COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab
COMMODITY: Silver GRADE: 1097.1000 Grams per tonne
Gold 17.1400 Grams per tonne
COMMENTS: Sample 25446.
REFERENCE: Assessment Report 14025.

CAPSULE GEOLOGY

The Star 2 prospect is located approximately 3 kilometres southwest of Drybrough Peak, some 280 kilometres north of Smithers. The Star 2 prospect lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Star 2 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Star 2 prospect is underlain by rocks of the Asitka Group and the Black Lake stock (part of the Black Lake Suite). Recrystallized limestone with minor interbeds of andesitic volcanics and chlorite schist comprise the Asitka Group. The Black Lake stock at this location consists of quartz diorite to quartz monzonite with minor porphyritic phases. A 5 to 10-metre wide sill-like hornblende pyroxene gabbro body is exposed south of the Star 2 prospect. Numerous biotite porphyry andesite dikes also crop out in the area. Propylitic alteration consisting of chlorite and epidote envelope calcite fractures in the volcanics adjacent to and in the intrusion. Potassic alteration occurs along abundant fractures within the quartz monzonite phase of the intrusion.

Skarns are present at limestone-intrusive contacts throughout the surrounding area. Composition varies in the area from diopside-wollastonite-calcite to garnet-diopside. Chalcopyrite, bornite, galena, sphalerite, pyrrhotite, magnetite, pyrite and malachite are hosted in both skarn types.

Galena and chalcopyrite are hosted in mineralized skarn outcrop, over an area roughly 50 metres diameter. Sample MB 4-82 was taken from skarn in 1983; assay results were 150.8 grams per tonne silver and less than 0.343 gram per tonne gold (Assessment Report 11106). A second sample from skarn was taken in 1985; assay results from this sample (25446) were 1097.1 grams per tonne silver and 17.14 grams per tonne gold (Assessment report 14025). Galena and sphalerite are also hosted in narrow veinlets in adjacent limestone.

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1987-C328-C346; 1988-C185-C194
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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986

RUN DATE: 26-Jun-2003
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MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 943
REPORT: RGEN0100

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WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/19
DATE REVISED: 1992/02/19

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 136**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUN 1, SUN, STAR,**
ACA, PUL, CO,
ACAPULCO GROUP

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6339995
EASTING: 623815

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 11 11 N
LONGITUDE: 126 57 05 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized veins hosted in limestone, located approximately 2.5 kilometres southwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 11106).

COMMODITIES: Silver Gold Copper

MINERALS

SIGNIFICANT: Tetrahedrite Bornite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Limestone
Chlorite Schist
Andesitic Volcanic
Andesite
Quartz Diorite
Quartz Monzonite
Hornblende Pyroxene Gabbro
Biotite Porphyry Andesite Dike

HOSTROCK COMMENTS: The Black Lake stock is part of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist Zeolite
PHYSIOGRAPHIC AREA: Omineca Mountains
COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 126.8600 Grams per tonne
Gold 2.0600 Grams per tonne
COMMENTS: Sample MB 7-82 from tetrahedrite-bornite bearing vein.
REFERENCE: Assessment Report 11106.

CAPSULE GEOLOGY

The Sun 1 showing is located approximately 2.5 kilometres southwest of Drybrough Peak, some 280 kilometres north of Smithers. The Star 1 prospect (094E 134) is located 250 metres further to the southwest. The Sun 1 showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west

CAPSULE GEOLOGY

and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Sun 1 showing is underlain by rocks of the Asitka Group and the Black Lake stock (part of the Black Lake Suite). Recrystallized limestone with minor interbeds of andesitic volcanics and chlorite schist comprise the Asitka Group. The Black Lake stock at this location consists of quartz diorite to quartz monzonite with minor porphyritic phases. A 5 to 10-metre wide sill-like hornblende pyroxene gabbro body is exposed northeast of the showing. Numerous biotite porphyry andesite dikes also crop out in the area. Propylitic alteration consisting of chlorite and epidote envelope calcite fractures in the volcanics adjacent to and in the intrusion. Potassic alteration occurs along abundant fractures within the quartz monzonite phase of the intrusion.

The showing consists of two veins hosted in limestone, approximately 220 metres apart. The more northerly of the two veins is situated at the 1640-metre elevation and contains tetrahedrite and bornite. Sample MB 7-82 from this vein assayed 126.86 grams per tonne silver and 2.06 grams per tonne gold (Assessment Report 11106). The southern vein, at the 1520-metres elevation, contains chalcopyrite and pyrite. Assay values from sample MB 13-82 were 144.00 grams per tonne silver and 1.03 grams per tonne gold (Assessment Report 11106).

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GSC OF 306; 483
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N MINER October 13, 1986
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IPDM Nov/Dec 1983
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WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/19
DATE REVISED: 1992/02/19

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 137**

NATIONAL MINERAL INVENTORY:

NAME(S): **PUL 1, PUL, ACA,
CO, SUN, STAR,
ACAPULCO GROUP**

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6341054
EASTING: 624069

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 11 45 N
LONGITUDE: 126 56 48 W
ELEVATION: 1725 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: An east-trending skarn zone, 160 metres long by 20 metres wide, located approximately 1.7 kilometres southwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 11106).

COMMODITIES: Silver Lead Copper Gold

MINERALS

SIGNIFICANT: Galena Chalcopyrite
ALTERATION: Garnet Diopside Wollastonite Calcite Chlorite
Epidote Malachite

COMMENTS: General skarn assemblage minerals reported in the area; details of specific assemblage and other sulphides present (if any) were not reported.

ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
DIMENSION: 160 x 20 Metres STRIKE/DIP: TREND/PLUNGE: 090/
COMMENTS: An east-trending skarn zone has been mapped as being 160 metres long by 20 metres wide (Assessment Report 11106).

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Limestone
Chlorite Schist
Andesitic Volcanic
Quartz Diorite
Quartz Monzonite
Skarn
Hornblende Pyroxene Gabbro
Biotite Porphyry Andesite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 144.0000 Grams per tonne
Gold 0.3430 Grams per tonne

COMMENTS: Sample MB 1-82, one of two samples taken from the eastern end of the skarn zone. Gold value is less than 0.343 gram per tonne.
REFERENCE: Assessment Report 11106.

CAPSULE GEOLOGY

The Pul 1 prospect is located approximately 1.75 kilometres southwest of Drybrough Peak, some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Pul 1 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. Takla volcanics have been intruded by the granodiorite to quartz monzonite Black Lake stock of Early Jurassic age and are in turn unconformably overlain by or faulted against Lower to Middle Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply-dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Pul 1 prospect is underlain by rocks of the Asitka Group and the Black Lake stock. Recrystallized limestone with minor interbeds of andesitic volcanics and chlorite schist comprise the Asitka Group. The Black Lake stock at this location consists of quartz diorite to quartz monzonite with minor porphyritic phases. A 5 to 10-metre wide sill-like hornblende pyroxene gabbro body is exposed west of the Pul 1 prospect. Numerous biotite porphyry andesite dikes also crop out in the area.

Propylitic alteration consisting of chlorite and epidote envelope calcite fractures in the volcanics adjacent to and in the intrusion. Potassic alteration occurs along abundant fractures within the quartz monzonite phase of the intrusion.

Skarns are present at limestone-intrusive contacts throughout the surrounding area. Composition varies in the area from diopside-wollastonite-calcite to garnet-diopside. Chalcopyrite, bornite, galena, sphalerite, pyrrhotite, magnetite, pyrite and malachite are hosted in both skarn types.

The Pul 1 prospect consists of a skarn zone mapped as 160 metres long by 20 metres wide. The skarn hosts galena and chalcopyrite. Two samples were taken from the east end of this skarn zone. Sample MB 1-82 assayed 144.00 grams per tonne silver and less than 0.343 gram per tonne gold (Assessment Report 11106). Sample MB 2-82 assayed 75.43 grams per tonne silver and less than 0.343 gram per tonne gold (Assessment Report 11106).

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1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/19
DATE REVISED: 1992/02/19

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 138**

NATIONAL MINERAL INVENTORY:

NAME(S): **PUL 7, PUL, ACA,
CO, SUN, STAR,
ACAPULCO GROUP**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 11 22 N
LONGITUDE: 126 56 06 W
ELEVATION: 1740 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Magnetite and chalcopyrite mineralization is hosted in a vein in a zone of potassic alteration, located approximately 1.7 kilometres southwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 11106).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6340365
EASTING: 624795

COMMODITIES: Silver Gold Copper Lead Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Galena Sphalerite Bornite
ASSOCIATED: Quartz Magnetite Chlorite Specularite
COMMENTS: Also manganese oxides.
ALTERATION: Chlorite Epidote
ALTERATION TYPE: Propylitic Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Monzonite
Quartz Diorite
Limestone
Chlorite Schist
Andesitic Volcanic
Andesite
Hornblende Pyroxene Gabbro
Biotite Porphyry Andesite Dike

HOSTROCK COMMENTS: The Black Lake stock is part of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 279.4000 Grams per tonne
Gold 0.3000 Grams per tonne
Copper 2.5800 Per cent
Lead 0.8200 Per cent
Zinc 0.1100 Per cent

COMMENTS: Sample SC-48-80-4.
REFERENCE: Assessment Report 9309.

CAPSULE GEOLOGY

The Pul 7 showing is located approximately 1.7 kilometres southwest of Drybrough Peak, some 280 kilometres north of Smithers.

CAPSULE GEOLOGY

The Pul 7 showing lies within the Omineca-Cassiar mountains at the southern end of the Toadoggone gold camp. The Pul 7 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Pul 7 showing is underlain by rocks of the Asitka Group and the Black Lake stock. Recrystallized limestone with minor interbeds of andesitic volcanics and chlorite schist comprise the Asitka Group underlying the Pul 7 showing. The Black Lake stock (part of the Black Lake Suite) at this location consists of quartz diorite to quartz monzonite with minor porphyritic phases. A 5 to 10-metre wide sill-like hornblende pyroxene gabbro body is exposed northwest of the Pul 7 showing. Numerous biotite porphyry andesite dikes also crop out in the area.

Propylitic alteration consisting of chlorite and epidote envelope calcite fractures in the volcanics adjacent to and in the intrusion. Potassic alteration occurs along abundant fractures within the quartz monzonite phase of the intrusion.

Vuggy to massive quartz-filled fractures are common around the intrusion-metasediment contact. Many of these contain chlorite, specularite and lesser amounts of galena, sphalerite and manganese oxides. Chalcopyrite, bornite, and minor amounts of gold and silver are associated with the quartz. The Pul 7 showing consists of a vein with chalcopyrite and magnetite in a zone of potassic alteration.

Assay results from sample SC-48-80-4 of this mineralized vein were 279.4 grams per tonne silver, 0.30 gram per tonne gold, 2.58 per cent copper, 0.82 per cent lead and 0.11 per cent zinc (Assessment Report 9309).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/19
DATE REVISED: 1992/02/19

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 139**

NATIONAL MINERAL INVENTORY:

NAME(S): **PUL 10, PUL, ACA,
CO, SUN, STAR,
ACAPULCO GROUP**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 57 11 19 N
LONGITUDE: 126 55 24 W

NORTHING: 6340293

ELEVATION: 1760 Metres

EASTING: 625503

LOCATION ACCURACY: Within 500M

COMMENTS: The showing is located approximately 1.5 kilometres due south of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 9309).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Asitka	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Monzonite
Quartz Diorite
Limestone
Chlorite Schist
Andesitic Volcanic
Andesite
Hornblende Pyroxene Gabbro
Biotite Porphyry Andesite Dike

HOSTROCK COMMENTS: The Black Lake stock of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional Contact

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1981

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

146.7000

Grams per tonne

Copper

2.4800

Per cent

COMMENTS: Sample SC-48-80-10.

REFERENCE: Assessment Report 9309.

CAPSULE GEOLOGY

The Pul 10 showing is located approximately 1.5 kilometres due south of Drybrough Peak, some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and

CAPSULE GEOLOGY

Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Pul 10 showing is underlain by rocks of the Asitka Group and the Black Lake stock. Recrystallized limestone with minor interbeds of andesitic volcanics and chlorite schist comprise the Asitka Group. The Black Lake stock (part of the Black Lake Suite) at this location consists of quartz diorite to quartz monzonite with minor porphyritic phases. A 5 to 10-metre wide sill-like hornblende pyroxene gabbro body is exposed northwest of the Pul 10 showing. Numerous biotite porphyry andesite dikes also crop out in the area.

Propylitic alteration consisting of chlorite and epidote envelope calcite fractures in the volcanics adjacent to and in the intrusion. Potassic alteration occurs along abundant fractures within the quartz monzonite phase of the intrusion.

Vuggy to massive quartz-filled fractures are common around the intrusion-metasediment contact. Many of these contain chlorite, specularite and lesser amounts of galena, sphalerite and manganese oxides. Chalcopyrite, bornite, and minor amounts of gold and silver are associated with the quartz.

The Pul 10 showing consists of a vein with chalcopyrite in quartz diorite to monzonite of the Black Lake stock in a zone of potassic alteration. Assay results from sample SC-48-80-10 of this mineralization were 146.7 grams per tonne silver, 0.07 gram per tonne gold, 2.48 per cent copper and 0.01 per cent molybdenum (Assessment Report 9309).

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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/19
DATE REVISED: 1992/02/19

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 140**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHASTEX**, SHASTEX 1, PARADISE,
PARADISE 1, DAWN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

LATITUDE: 57 14 25 N
LONGITUDE: 126 57 22 W
ELEVATION: 1710 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Silver and gold-bearing veins, located approximately 4.7 kilometres north-northwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 15310).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6345984
EASTING: 623350

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Sericite Pyrite
COMMENTS: Alteration minerals are assumed from reported propylitic alteration and the identification of these minerals in propylitic-altered zones nearby.

ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic	Hazelton	Toodoggone	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Augite Feldspar Phyric Basalt
Augite Feldspar Phyric Andesite
Lapilli Tuff
Plagioclase Basalt Andesite Breccia
Siltstone
Sandstone
Greywacke
Pyroclastic
Hornblende Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Silver	37.5000	Grams per tonne
Gold	0.3100	Grams per tonne

COMMENTS: Sample PS 47, one of two samples.
REFERENCE: Assessment Report 15310.

CAPSULE GEOLOGY

The Shastex showing is located approximately 4.7 kilometres north-northwest of Drybrough Peak, some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Shastex showing

CAPSULE GEOLOGY

is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply-dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Shastex showing is underlain by Takla Group volcanic rocks consisting of augite and feldspar phyric basalt to andesite breccias and lapilli tuffs interbedded with siltstone, sandstone and greywacke. The showing consists of quartz veins and stringers up to 30 centimetres wide forming a stockwork of fine-grained, vuggy quartz with associated pyrite and propylitic alteration. To the south, Toodoggone Formation volcanic rocks are exposed as a fault-bound block and consist of coarse pyroclastics and clastics. Intrusive outcrops are scattered throughout the area consisting of variable altered hornblende granodiorite of the Black Lake stock.

Two samples were taken approximately 40 metres apart from this zone of quartz veins and stringers. Sample PS 46 assayed greater than 100 grams per tonne silver and 0.193 gram per tonne gold (Assessment Report 15310). Sample PS 47 assayed 37.5 grams per tonne silver and 0.310 gram per tonne gold (Assessment Report 15310).

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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol.1, #7, June 1987

DATE CODED: 1992/02/24
DATE REVISED: 1992/02/24

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 141**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAWN 2**, DAWN, SHASTEX,
SHASTEX 1, PARADISE, PARADISE 1

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:
LATITUDE: 57 13 25 N
LONGITUDE: 126 57 46 W
ELEVATION: 1820 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: A quartz vein, and is located approximately 3.3 kilometres north-northwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 13273).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6344117
EASTING: 623003

COMMODITIES: Silver Lead Zinc Copper Gold

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
COMMENTS: Propylitic alteration is present at other vein occurrences in the vicinity.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 43 x 5 Metres STRIKE/DIP: 140/80S TREND/PLUNGE:
COMMENTS: A zone of quartz-carbonate veins; the main vein is 1 to 2 metres wide (Assessment Report 13273). Epithermal mineralization is Lower Jurassic (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 193.8 +/- 2.6 Ma			
DATING METHOD: Argon/Argon			
MATERIAL DATED: Hornblende			
Upper Triassic	Takla	Undefined Formation	

LITHOLOGY: Volcanic Breccia
Siltstone
Pyroxene Phyric Andesite

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Attycelley Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Located at the southern end of the Toodoggone gold camp. GRADE: Greenschist Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1984
SAMPLE TYPE: Chip	
COMMODITY	<u>GRADE</u>
Silver	62.1100 Grams per tonne
Gold	0.0542 Grams per tonne
Lead	3.9000 Per cent
Zinc	1.0000 Per cent

COMMENTS: Grades are the weighted averages of seven 1-metre chip samples from the main vein. The zinc value is greater than 1 per cent.
REFERENCE: Assessment Report 13273.

CAPSULE GEOLOGY

The Dawn 2 prospect is located approximately 3.3 kilometres north-northwest of Drybrough Peak, some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains

CAPSULE GEOLOGY

at the southern end of the Toodoggone gold camp. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Dawn 2 prospect consists of several zones of adularia-sericite type epithermal quartz-carbonate veins hosted in volcanic breccia and laminated siltstone of the Toodoggone Formation or along the contact between the Toodoggone Formation and pyroxene phyrlic andesite of the Takla Group. The preferred orientation of these veins is 080 to 100 degrees, 005 to 026 degrees and 135 to 165 degrees. All three orientations dip moderately to steeply south. In general, veins with the first two orientations have a surface exposure of 5 metres or less. With one exception, these veins are barren of visible sulphide mineralization but do yield anomalous gold and silver values.

The main zone consists of a series of quartz-carbonate veins in a zone 43 metres long by 5 metres wide, along a thrust fault placing Takla Group volcanics over lithologies of the Toodoggone Formation. The thrust fault strikes approximately 140 degrees and dips 80 degrees south. At the base of this zone, a 1 to 2-metre thick white to grey quartz-carbonate vein is exposed along the thrust contact for approximately 43 metres. Variable amounts of galena, sphalerite, chalcopyrite, pyrite and malachite mineralization occur within this vein. Sulphides total up to 25 per cent over 1 metre.

A series of chip samples were taken from a 25-metre section of the vein at the main zone. The weighted average from seven 1-metre chip samples are as follows: 62.11 grams per tonne silver, 3.9 per cent lead, greater than 1 per cent zinc and 0.0542 gram per tonne gold (Assessment Report 13273). Assay values from rock chips of various other veins were up to 0.795 gram per tonne gold and 81.3 grams per tonne silver (Assessment Report 13273).

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

MINFILE NUMBER: **094E 142**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOCK 3**, JOCK, JOCK 1-13,
ITSCH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 14 57 N
LONGITUDE: 126 51 12 W
ELEVATION: 1460 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6347164
EASTING: 629520

COMMENTS: Sample SM-JK-2, located west of Finlay River and 6 kilometres east-northeast of Drybrough Peak, about 275 kilometres north of Smithers (Assessment Report 14789).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Hematite Silica
ALTERATION TYPE: Argillic Silicific'n
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 193 +/- 7 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Alunite

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
COMMENTS: The date was determined on alunite taken from a ridge 750 metres northwest of the Jock 3 showing.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Quartz Porphyritic Andesite
Quartz Breccia
Hornblende Plagioclase Andesite Flow
Hornblende Plagioclase Andesite Tuff
Hornblende Plagioclase Andesite Breccia
Lahar
Conglomerate
Greywacke
Siltstone
Rhyolite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the southwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 2.1000 Grams per tonne
Gold 0.2100 Grams per tonne

COMMENTS: Sample SM-JK-02.
REFERENCE: Assessment Report 14789.

CAPSULE GEOLOGY

The Jock 3 showing is located west of Finlay River and 6 kilometres east-northeast of Drybrough Peak in the Omineca-Cassiar mountains some 275 kilometres north of Smithers. The occurrence is at the southern end of the Toodoggone gold camp which lies within the eastern margin of the Intermontane Belt and is underlain by a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions. The Jock 3 showing is situated within a Mesozoic

CAPSULE GEOLOGY

volcanic arc assemblage bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Jock 3 showing is underlain by volcanics of the Toodoggone Formation consisting of predominantly hornblende-plagioclase and plagioclase phyric andesite porphyry flows, tuffs and breccias with lesser lahar, conglomerate, greywacke, siltstone and rare rhyolite. A major fault structure striking northwest lies a few hundred metres to the southwest of the Jock 3 showing. Outcrops along this fault structure consist of quartz breccia and veining with hematite-coated fractures, silicification and up to 1 per cent disseminated pyrite.

A number of epithermal quartz veins and brecciated quartz vein systems with pyrite have been identified around and at the Jock 3 showing. To date, all except the Jock 3 showing have failed to indicate anomalous gold and silver values from assayed rock samples. Two samples were taken from the Jock 3 showing during exploration in 1985. The first consisted of argillic-altered quartz-eye andesite. Assay results from sample SM-JK-02 were 2.1 grams per tonne silver and 0.21 gram per tonne gold (Assessment Report 14789). The second sample (SM-JK-01) consisted of argillic-altered quartz breccia. Assay values from this sample were 0.6 gram per tonne silver and 0.45 gram per tonne gold (Assessment Report 14789).

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1987-C328-C346; 1988-C185-C194
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291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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- GSC P 80-1A, pp. 27-32
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- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- ECON GEOL Vol. 86, pp. 529-554, 1991
- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/26
DATE REVISED: 1992/02/26

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 143**

NATIONAL MINERAL INVENTORY:

NAME(S): **FOGHORN**, LEGHORN, DRY,
DRY 7

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 13 39 N
LONGITUDE: 126 58 13 W
ELEVATION: 1950 Metres

NORTHING: 6344536
EASTING: 622537

LOCATION ACCURACY: Within 500M

COMMENTS: A quartz vein stockwork, located approximately 4 kilometres northwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 11525).

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Silica Hematite Limonite

COMMENTS: In this region, hematite and limonite are generally associated with this style of mineralization.

ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 500 x 1 Metres

STRIKE/DIP: TREND/PLUNGE: 305/

COMMENTS: A zone of quartz-carbonate vein stockwork averages 500 metres long by 1.5 metres wide and trends 305 degrees (Assessment Report 11525).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Porphyritic Augite Plagioclase Andesite
Lahar
Diorite
Quartz Diorite
Porphyritic Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1983

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver 45.5000 Grams per tonne

Gold 2.6000 Grams per tonne

COMMENTS: Sample AA-27017, one of two samples from the same location.

REFERENCE: Assessment Report 11525.

CAPSULE GEOLOGY

The Foghorn prospect is located approximately 4 kilometres northwest of Drybrough Peak, some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of

CAPSULE GEOLOGY

Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggon Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Foghorn prospect is underlain by porphyritic augite plagioclase andesites and related lahars of the Takla Group. These Takla Group volcanics are bounded on the west by quartz diorite to diorite of the Black Lake stock. Propylitic alteration is commonly well developed in the Takla Group volcanics, particularly around porphyritic diorite dikes. Quartz and/or carbonate veining is moderately common as individual veins and as vuggy stockworks. Hematitic and limonitic alteration is common around these vein stockworks.

The Foghorn prospect consists of a major quartz-carbonate vein stockwork zone averaging about 500 metres long by 1.5 metres wide and trending 305 degrees. Veins are vuggy with drusy quartz linings and have pervasive silicification associated with them. Carbonate is commonly associated with these veins. Disseminated pyrite is abundant in both veins and surrounding country rocks.

A total of eight rock chip samples were taken from this quartz vein stockwork during property exploration in 1983. Several of these samples yielded significant assay results. Sample AA-27107 analysed 45.5 grams per tonne silver and 2.60 grams per tonne gold (Assessment Report 11525). A second sample from the same location, sample AA-27018, assayed 54.5 grams per tonne silver and 2.05 grams per tonne gold (Assessment Report 11525).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
- EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
- EMPR BULL 86
- EMPR ASS RPT *11525, 14167, 17898
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- EMPR GEOLOGY 1977-1981, pp. 156-161
- GSC BULL 270
- GSC OF 306; 483
- GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
- W MINER April, 1982
- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- ECON GEOL Vol. 86, pp. 529-554, 1991
- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/27
DATE REVISED: 1992/02/27

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 144**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEGHORN 1**, LEGHORN, FOGHORN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 12 46 N
LONGITUDE: 126 57 40 W
ELEVATION: 1660 Metres

NORTHING: 6342914
EASTING: 623140

LOCATION ACCURACY: Within 500M

COMMENTS: A quartz-veined stockwork, exposed in a zone 250 metres long by 0.4 metre wide, located approximately 4 kilometres northwest of Drybrough Peak, about 280 kilometres north of Smithers (Assessment Report 17898).

COMMODITIES: Silver Gold Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite
ASSOCIATED: Quartz Carbonate Calcite
ALTERATION: Hematite Limonite

COMMENTS: In this region, limonite and hematite are generally associated with style of mineralization.

ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 250 x 1 Metres

STRIKE/DIP: TREND/PLUNGE: 325/

COMMENTS: A quartz vein stockwork is exposed over a zone 250 metres long by 0.4 metre wide and trends 325 degrees (Assessment Report 17898).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic			Black Lake Stock

ISOTOPIC AGE: 204 +/- 9 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Augite Plagioclase Andesite Flow
Augite Plagioclase Andesite Breccia
Andesite
Siltstone
Tuffaceous Sediment/Sedimentary
Limestone
Diorite
Quartz Diorite
Porphyritic Diorite Dike

HOSTROCK COMMENTS: The Black Lake stock is part of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	8.3000	Grams per tonne
Copper	0.1600	Per cent
Lead	0.3270	Per cent
Zinc	0.3450	Per cent

COMMENTS: Sample LH88H 190.
REFERENCE: Assessment Report 17898.

CAPSULE GEOLOGY

The Leghorn 1 prospect is located approximately 4 kilometres northwest of Drybrough Peak, some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Leghorn 1 prospect is underlain by porphyritic augite plagioclase andesite flows and breccias with lesser siltstone, tuffaceous sediments and limestone of the Takla Group. These Takla Group lithologies are bounded on the west by quartz diorite to diorite of the Black Lake stock. Propylitic alteration is commonly well developed in the Takla Group volcanics, particularly around porphyritic diorite dikes. Quartz and/or carbonate veining is moderately common as individual veins and as vuggy stockworks. Hematitic and limonitic alteration is common around these veins and stockworks.

The Leghorn 1 prospect consists of a quartz-calcite vein system, extending from about the 1823-metre elevation downward along a 325 degree trend for 250 metres. The average width is 40 centimetres and in several places the vein horsetails into narrow stringers. A crosscutting fault offsets the vein by up to 40 metres. Galena, chalcopryrite and sphalerite are disseminated throughout the vein.

Sample 85-E-12, taken in 1985, assayed 266 grams per tonne silver and 0.12 gram per tonne gold (Assessment Report 17898). Sample LH88 190, taken in 1988, analysed 8.3 grams per tonne silver, 0.345 per cent zinc, 0.327 per cent lead and 0.160 per cent copper (Assessment Report 17898). Other samples from this vein assayed as high as 58.0 grams per tonne silver, 2.33 grams per tonne gold and 2.05 per cent zinc (Assessment Report 17898).

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

MINFILE NUMBER: **094E 145**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER REEF**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E02W 094E03E 094E06E 094E07W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 14 48 N
LONGITUDE: 126 59 11 W
ELEVATION: 1500 Metres

NORTHING: 6346640
EASTING: 621502

LOCATION ACCURACY: Within 500M

COMMENTS: A 1 to 3-metre wide mineralized zone, traced east-southeastward from the Shasta occurrence (094E 050), about 280 kilometres north of Smithers (Assessment Report 9886).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Limonite Jarosite Silica

COMMENTS: The Silver Reef showing is 1 kilometre southeast of the Shasta mine (094E 050) where adularia was dated (Bulletin 86). Manganese oxide staining is common on quartz crystals.

ALTERATION TYPE: Alunitic Silicific'n Oxidation
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epigenetic Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 3 Metres STRIKE/DIP: 300/70E

TREND/PLUNGE:

COMMENTS: A quartz vein stockwork, at the main zone, is 1 to 3 metres wide. The main exposure strikes 300 degrees with an easterly dip of 50 to 90 degrees (Assessment Report 9886).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
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Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 193.8 +/- 2.8 Ma			
DATING METHOD: Argon/Argon			
MATERIAL DATED: Hornblende			

Lower Jurassic			Black Lake Stock
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ISOTOPIC AGE: 204 +/- 9 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Hornblende			

LITHOLOGY: Dacitic Feldspar Quartz Tuff
Chloritic Heterolithic Lapilli Tuff
Feldspar Biotite Porphyry Flow
Feldspar Phyrlic Tuff
Heterolithic Agglomerate
Lahar
Ash Tuff

HOSTROCK COMMENTS: The Black Lake stock lies 2 kilometres to the southwest; hostrocks are assigned to the Attycelley and Saunders members (Toodoggone Fm.).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: GRADE: Greenschist Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	1.0280	Grams per tonne
Gold	0.2700	Grams per tonne

COMMENTS: Sample 32130 from the main zone, east-southeast of and on strike with the Shasta occurrence (094E 050).

REFERENCE: Assessment Report 9886.

CAPSULE GEOLOGY

The Silver Reef showing is located approximately 1 kilometre southeast of the former Shasta mine (094E 050), some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Silver Reef showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Silver Reef showing is underlain by the Attycelley and overlying Saunders members of the Toodoggone Formation volcanics. The Attycelley Member (a pyroclastic series) unconformably overlies pyroxene feldspar phyrlic basalt flows and breccias of the Takla Group. To the north of the Silver Reef showing, the Attycelley Member consists of dacitic feldspar quartz crystal tuffs, chloritic and heterolithic lapilli tuffs, and an underlying feldspar-quartz-biotite porphyry flow. These units all contain characteristic orange-weathering plagioclase feldspars. The Saunders Member (an epivolcaniclastic series) consists of green to maroon feldspar phyrlic tuffs, heterolithic agglomerates, lahars and ash tuffs.

Locally the volcanic rocks of the Toodoggone Formation are feldspathized and silicified in quartz vein and brecciated vein stockwork zones. These zones weather a distinctive pink-white and are frequently accompanied by limonite and jarosite staining. Composition of these veins is 30 to 70 per cent feldspar in a dark green matrix containing small vitreous quartz crystals and finely disseminated pyrite. Brecciated zones within veins contain elongate drusy cavities 2 to 10 millimetres wide. Manganese oxide staining is common on quartz crystals. Extensive silicification is common in country rocks adjacent to breccia zones.

The Silver Reef showing is immediately west of a major thrust fault between structurally overlying Takla Group volcanics and the underlying Toodoggone volcanics. The showing consists of portions of a quartz vein stockwork, traced east-southeastward from the former Shasta mine (094E 050), and several small silicified zones 450 and 700 metres to the east, and 1300 metres to the northeast.

The main exposure, in a steep bluff on trend with the Shasta mine, strikes approximately 300 degrees with an easterly dip of 50 to 90 degrees. Here the altered zone is 1 to 3 metres wide, consisting mainly of silicified stockwork bands in unaltered fresh volcanics. Mineralization is minimal in veins from this zone and samples assayed negligible precious and base metals. Sample 32130 yielded the highest precious metals values; 1.028 grams per tonne silver and 0.27 gram per tonne gold (Assessment Report 9886).

Two distinct zones occur 450 and 700 metres east of the main zone respectively. These zones trend northwestward and dip steeply northeast. One band was traced in felseneer for about 100 metres along strike. Variable amounts of pyrite (up to 15 per cent) occur in veins and jarosite alteration is common. Four small trenches were blasted to uncover fresh vein material. Assay results from these trenches were up to 0.04 per cent lead, 0.02 per cent zinc, 0.686 gram per tonne silver and 0.343 gram per tonne gold (Assessment Report 9886).

Silicification in the northeast zone is limited. Vein material assayed only trace amounts of base and precious metals (Assessment Report 9886). Assay results from soil samples at this zone indicated strong lead, zinc, silver and gold anomalies, suggesting the possibility of mineralized vein material nearby (Assessment Report 9886).

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W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1); #146(July 30), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/28
DATE REVISED: 1992/02/28

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 146**

NATIONAL MINERAL INVENTORY:

NAME(S): **TAKLA**, BRENDA, TOM 3,
MAX 1, TOM 3-5, JAN 1-2,
POCK, HANS, BRENDA 1-8,
MAX 1-3

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W 094E07W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6346588
EASTING: 625948

LATITUDE: 57 14 42 N
LONGITUDE: 126 54 46 W
ELEVATION: 1750 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of drillholes 88-7 and 88-8, located approximately 1.7 kilometres east-southeast of the Shasta mine (094E 050), about 280 kilometres north of Smithers (Assessment Report 15555).

COMMODITIES: Silver Gold Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite
ASSOCIATED: Quartz Chalcedony Calcite
ALTERATION: Silica Epidote Chlorite Pyrite Hematite
Limonite Kaolinite

ALTERATION TYPE: Silicific'n Propylitic Hematite Argillic Pyrite
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 193 +/- 7 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Alunite

DEPOSIT

CHARACTER: Breccia Vein Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 200 x 60 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A quartz-chalcedony breccia stockwork is 40 to 60 metres wide. The isotopic date was determined on alunite taken from the White Pass area (094E 107) 3.5 kilometres northeast of this occurrence (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 194.2 +/- 3.6 Ma		
	DATING METHOD: Argon/Argon		
Upper Triassic	Hornblende Takla	Undefined Formation	

LITHOLOGY: Hornblende Feldspar Porphyritic Andesite
Hornblende Feldspar Porphyritic Dacite
Lapilli Tuff
Agglomerate
Mudstone
Siltstone
Augite Feldspar Porphyritic Andesite
Quartz Monzonite

HOSTROCK COMMENTS: Toodoggone volcanics are assigned to the Saunders Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Silver	9.5900	Grams per tonne
Gold	0.7100	Grams per tonne
Lead	0.0031	Per cent
Zinc	0.0053	Per cent

COMMENTS: Sample P5481 over the 1.37-metre interval from 43.5 to 44.87 metres in drillhole Tak-88-8.

REFERENCE: Assessment Report 18441.

CAPSULE GEOLOGY

The Takla prospect, on the Brenda property, is located approximately 1.7 kilometres east-southeast of the Shasta mine (094E 050), some 280 kilometres north of Smithers. There are 4 mineralized zones on the Brenda property: the Takla zone, the Creek zone (094E 107), the White Pass area/Brenda zone (094E 147) and the EB zone (094E 148).

The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toadoggone gold camp. The Takla prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

A package of unaltered to strongly altered mafic to intermediate lapilli tuffs and agglomerates predominantly of the Toadoggone Formation but also of the Takla Group were intersected in all drillholes, from several drill programs. The Toadoggone volcanics are composed of fine to medium-grained, dark grey-green hornblende and feldspar porphyritic andesites and lesser dacites. Thin units of mudstone and siltstone are interbedded with Toadoggone volcanics. Alteration frequently consists of epidote-altered mafic phenocrysts and local strong silica and kaolin alteration, usually reflecting zones of shearing and/or faulting with accompanying quartz-chalcedony stockwork systems. Lithologies of the Toadoggone Formation are assigned to the Saunders Member. Variably silicified, dark green to black, fine-grained augite feldspar porphyritic andesites comprise Takla Group volcanics. Takla Group volcanics were intersected in drillholes Tak-88-5 and 88-3 only. A small quartz monzonite stock crops out about 150 metres to the northeast of the Takla prospect and is probably related to the nearby Black Lake stock situated 3.5 kilometres to the southwest.

The Takla prospect consists of a large area of quartz-chalcedony breccia and veinlets. Initial prospecting has indicated silicification over an area at least 200 metres long by 40 to 60 metres wide. The veins consist of colorless to white or light grey quartz and chalcedony striking northeast and east, with steep variable dips. Banding and cockscomb textures are common. Late-stage calcite occurs in the centre of some veins. Crosscutting textures indicate rebrecciation and silicification. The veins contain less than 1 to 10 per cent euhedral pyrite and boxwork limonite. Pyrite alteration is also evident in vein wallrocks. Minor amounts of chalcopryrite, galena and sphalerite occur in some veins. Epidote fracture fillings are extensive and common, forming a wide envelope around the quartz-chalcedony breccia zones. Intensive hematite alteration occurs in several places. Argillic alteration is also present.

The Brenda claims were staked in 1980 for Canmine Development Company Inc. In 1981, Canmine carried out a program of geology and geophysics. In 1984, hand trenching and prospecting was conducted. In 1985, Canmine optioned the property to Canasil Resources. Detailed mapping, geophysical surveys and soil sampling was conducted

CAPSULE GEOLOGY

along Jock Creek. In 1987, trenching and geochemical surveys were completed in a joint venture with Cyprus Gold Canada Inc.

In 1988, an extensive drill program, consisting of a total of 792.68 metres in 8 holes, was conducted on the Takla prospect. The purpose of the program was to test the on-strike and downdip potential of strong anomalous gold and silver analytical results from rock samples on the surface of this zone, as well as a strong multipole induced polarization resistivity conductor. Surface sampling yielded a high of 0.215 gram per tonne gold and 1.3 grams per tonne silver (Assessment Report 18441). The highest drill core analytical results were obtained from drillholes Tak-88-7 and 88-8. Toodoggone volcanics in these two holes exhibited strong silica, argillic and pyrite alteration in a zone of quartz-chalcedony veining and brecciation. Aggregates of sphalerite and galena were observed in drill core from this zone. Assay results from drill core are as follows. Drillhole Tak-88-08 assayed 6.6 grams per tonne silver, 0.076 gram per tonne gold, 0.0052 per cent zinc and 0.0006 per cent lead over the interval 103.2 to 105.2 metres. Drillhole Tak-88-07 assayed 9.59 grams per tonne silver, 0.71 gram per tonne gold, 0.0053 per cent zinc and 0.0031 per cent lead over the interval 43.5 to 44.87 metres (Assessment Report 18441). Results from other drillholes were less anomalous, ranging from 1.3 to 4.3 grams per tonne silver and 0.106 to 0.745 gram per tonne gold (Assessment Report 18441).

In 1989, trenching and geophysical and geochemical surveys were completed on the Brenda property.

A program of followup trenching was conducted in 1990 on the Creek zone, the White Pass east zone and the EB zone (Assessment Report 20963).

In 1991 (Assessment Report 22272), hand trenching and rock sampling were completed on the White Pass East zone, the EB zone and the Creek zone. A geochemical survey was completed on the White Pass East zone.

In 1992, 2 drillholes were completed on the Creek zone, 4 drillholes on the White Pass East zone and 7 holes on the EB zone. (Assessment Report 22820).

In 1993, Romulus Resources drilled 4 deep holes in the White Pass area on the Brenda zone (Assessment Report 23385).

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Plan Map 1:10000, (Nov., 1987), Canasil Resources Inc.)
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
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GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
PR REL Northgate Exploration Ltd., September 17, 2002
W MINER April, 1982
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/02/28
DATE REVISED: 1996/09/04

CODED BY: KJM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 147**

NATIONAL MINERAL INVENTORY:

NAME(S): **BRENDA**, WHITE PASS, BRENDA ZONE,
WHITE PASS EAST, TOM 4, POCK,
TOM 3-5, JAN 1-2, HANS,
BRENDA 1-8, MAX 1-3

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E07W 094E02W
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 15 18 N
LONGITUDE: 126 52 07 W
ELEVATION: 1560 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6347784
EASTING: 628578

LOCATION ACCURACY: Within 500M

COMMENTS: Trench IP-WPG-3, encountering a zone of weakly mineralized quartz-chalcedony stringers, located 7.5 kilometres due east of the Shasta occurrence (094E 050) about 280 kilometres north of Smithers (Assessment Report 20963).

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Galena Sphalerite Chalcocite
Copper

COMMENTS: These minerals apply to the Brenda prospect (094E 107).

ASSOCIATED: Quartz Chalcedony

ALTERATION: Sericitic

ALTERATION TYPE: Sericitic Propylitic Argillic

MINERALIZATION AGE: Lower Jurassic

ISOTOPIC AGE: 193 +/- 7 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Alunite

DEPOSIT

CHARACTER: Stockwork Breccia
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation L02 Porphyry-related Au

COMMENTS: An age date was determined on alunite taken from a ridge 750 metres northeast of the White Pass occurrence (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Black Lake Stock

LITHOLOGY: Trachyandesite
Andesite
Homblende Plagioclase Andesite Flow
Homblende Plagioclase Andesite Tuff
Homblende Plagioclase Andesite Breccia
Lahar
Conglomerate
Greywacke
Quartz Diorite
Granodiorite

HOSTROCK COMMENTS: The Black Lake stock is part of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the south-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1993

COMMODITY	GRADE	
Silver	4.8000	Grams per tonne
Gold	1.1000	Grams per tonne
Copper	0.1300	Per cent
Lead	0.0033	Per cent
Zinc	0.0110	Per cent

COMMENTS: Average across 47.8 metres of silicified plagioclase porphyry from drillhole 93-1 on the Brenda zone (9.14 metres to 57 metres).

REFERENCE: Assessment Report 23385.

CAPSULE GEOLOGY

The White Pass prospect, on the Brenda property, is located approximately 7.5 kilometres due east of the Shasta occurrence (094E 050), some 280 kilometres north of Smithers. There are 4 mineralized zones on the Brenda property: the White Pass area (Brenda zone), the Creek zone (094E 107), the EB zone (094E 148) and the Takla zone (094E 146).

The prospect lies within the Omineca-Cassiar mountains at the southern end of the Toadoggone gold camp. The occurrence is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply-dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The White Pass prospect is underlain by rocks of the Toadoggone Formation. Regional mapping has identified hornblende-plagioclase and plagioclase phyric andesite flows, tuffs and breccias with lesser lahar, conglomerate, greywacke and siltstone. Immediately to the east of the prospect a subcircular quartz diorite to granodiorite stock, 1.75 kilometres in diameter, is exposed. This stock is probably related to the Black Lake stock (part of the Black Lake Suite) situated 3.7 kilometres to the southwest.

The Brenda claims were staked in 1980 for Canmine Development Company Inc. In 1981, Canmine carried out a program of geology and geophysics. In 1984, hand trenching and prospecting was conducted. In 1985, Canmine optioned the property to Canasil Resources. Detailed mapping, geophysical surveys and soil sampling were conducted along Jock Creek. In 1987, trenching and geochemical surveys were completed in a joint venture with Cyprus Gold Canada Inc. In 1988, 12 drillholes were completed on the Creek zone, the EB zone and the Takla zone. In 1989, trenching and geophysical and geochemical surveys were completed. A program of followup trenching was conducted in 1990 on the Creek zone, the White Pass east zone and the EB zone. In 1991 (Assessment Report 22272), hand trenching and rock sampling were completed on the White Pass East zone, the EB zone and the Creek zone. A geochemical survey was completed on the White Pass East zone. In 1992 (Assessment Report 22820), 2 drillholes were completed on the Creek zone, 4 drillholes on the White Pass East zone and 7 holes on the EB zone. In 1993, Romulus Resources drilled 4 deep holes in the White Pass area on the Brenda zone.

The White Pass area contains an extensive zone of quartz breccia and stockwork associated with a zone of intense argillic alteration. Trenching traced the mineralization over a 300 metre by 60 metre area and indicated that the zone was open in all directions. A total of 135 panel samples at 1-metre intervals were collected from the trenches. The best assay results were from trench IP-WPG-3 over a 3-metre interval (82 to 85 metres). The results were 1.62 grams per tonne gold, 2.86 grams per tonne silver, 0.0245 per cent copper, 0.0179 per cent lead and 0.0129 per cent zinc (Assessment Report 20963). Other trench sampling results for gold are as follows: trench IP-WPG-5 analysed 1.21 grams per tonne gold over 12 metres

CAPSULE GEOLOGY

including 6 metres of 1.43 grams per tonne and 5 metres of 1.13 grams per tonne; and trench IP-WPG-8 analysed 1.41 grams per tonne gold over 2 metres (Assessment Report 20963).

In 1990, a strong soil geochemistry anomaly at the White Pass location was tested by 418 linear metres of backhoe trenching in ten trenches. Trenching uncovered weakly mineralized quartz-chalcedony stringers and breccias in highly sheared, fractured and altered trachyandesite. Argillic and propylitic alteration were pervasive throughout the trenches.

Drilling in 1992 in the White Pass area intersected disseminated and vein stockwork mineralization. Mineralization consisted of pyrite, chalcopyrite, sphalerite and galena.

There are two phases of gold-rich porphyry copper mineralization at the Brenda zone. These are associated with quartz stockworks and sericitic alteration. One phase carries gold mineralization plus copper in the range of 0.1 to 0.3 per cent. The other carries similar gold grades but associated copper concentrations are only about 0.05 per cent. Minor concentrations of native copper and chalcocite have been observed but no significant supergene zone has been discovered. The best results from drilling in 1993 was in hole 93-1 over 47.8 metres of silicified plagioclase porphyry with a weighted average of 1.1 grams per tonne gold, 0.130 per cent copper, 4.8 grams per tonne silver, 0.0033 per cent lead and 0.0110 per cent zinc (Assessment Report 23385).

In 1997, Canasil Resources Inc. drilled 5 holes, totalling 734 metres. A 24-metre intersection assayed 1.12 grams per tonne gold and 0.13 per cent copper (Exploration in BC 1997, page 25).

Northgate Exploration Ltd. drilled 4 core holes in 2002, totalling 1,650 metres, and reported mineralized zones containing gold and copper in each hole (Press Release, Northgate Exploration Ltd., November 22, 2002).

Northgate Exploration Ltd. conducted high-resolution magnetic, radiometric and satellite imaging surveys and 1,650 metres of diamond drilling in four holes during 2002.

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IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986; July 3, 1995; Nov.11, 2002
N MINER MAG March 1988, p. 1
PR REL Northgate Exploration Ltd., Nov.22, 2002; Canasil Resources
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V STOCKWATCH Aug. 15, 1966; Aug. 24, Dec. 1, 1988; May 23, July 24,
Aug. 27, 1990; Jan. 14, 1991; Feb. 23, June 14, Aug. 16, Nov. 16,
1993; Feb. 4, 1994; Jan. 6, June, Nov. 22, 1995
W MINER April, 1982
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/09
DATE REVISED: 1996/09/04

CODED BY: KJM
REVISED BY: TGS

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094E 148**

NATIONAL MINERAL INVENTORY:

NAME(S): **EB**, TOM 3, TOM,
TOM 3-5, JAN, JAN 1-2,
POCK, HANS, BRENDA,
BRENDA 1-8, MAX, MAX 1-3

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E02W 094E07W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6347136
EASTING: 626653

LATITUDE: 57 14 59 N
LONGITUDE: 126 54 03 W
ELEVATION: 1640 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: Trenching has intersected a large quartz breccia zone located approximately 5.5 kilometres east-southeast of the Shasta mine (094E 050), about 280 kilometres north of Smithers (Assessment Report 20963).

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Argentite Electrum Gold Silver Chalcopyrite
Galena Sphalerite

COMMENTS: Ambiguity exists as to what zones or occurrences these minerals apply to.

ASSOCIATED: Quartz

ALTERATION: Silica

ALTERATION TYPE: Silicific'n

MINERALIZATION AGE: Lower Jurassic

ISOTOPIC AGE: 193 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Alunite

DEPOSIT

CHARACTER: Breccia Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 24 x 4 Metres

STRIKE/DIP: 008/75E

TREND/PLUNGE:

COMMENTS: Quartz breccia stockwork, 2-4 metres wide, dips 68 to 82 degrees east. The age date was determined on alunite taken from the White Pass area (094E 107) 2.7 kilometres northwest of this showing (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Lower Jurassic			Black Lake Stock
Lower Jurassic			Black Lake Suite

LITHOLOGY: Andesite
Homblende Plagioclase Andesite Flow
Homblende Plagioclase Andesite Tuff
Homblende Plagioclase Andesite Breccia
Lahar
Conglomerate
Greywacke
Siltstone
Quartz Diorite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the south-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1992

COMMODITY	GRADE	
Silver	6.5000	Grams per tonne
Gold	0.6750	Grams per tonne

COMMENTS: Highest assay values, from drillhole EB 92-04.
REFERENCE: Assessment Report 22820.

CAPSULE GEOLOGY

The EB prospect is located approximately 5.5 kilometres east-southeast of the Shasta mine (094E 050), some 280 kilometres north of Smithers. There are 4 mineralized zones on the Brenda property: the EB zone, the Creek zone (094E 107), the White Pass area/Brenda zone (094E 147) and the Takla zone (094E 146).

The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The prospect occurs within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The EB prospect is underlain by the Toodoggone Formation. Regional mapping has identified hornblende-plagioclase and plagioclase phyric andesite flows, tuffs and breccias with lesser lahar, conglomerate, greywacke and siltstone (Bulletin 86). Immediately to the north of the prospect a subcircular quartz diorite to granodiorite stock, 1.75 kilometres in diameter, is exposed. This stock is probably related to the Black Lake stock (part of the Black Lake Suite) situated 3.7 kilometres to the southwest.

The Brenda claims were staked in 1980 for Canmine Development Company Inc. In 1981, Canmine carried out a program of geology and geophysics. In 1984, hand trenching and prospecting was conducted. In 1985, Canmine optioned the property to Canasil Resources. Detailed mapping, geophysical surveys and soil sampling was conducted along Jock Creek. In 1987, trenching and geochemical surveys were completed in a joint venture with Cyprus Gold Canada Inc. A drill program in 1988 consisted of 4 holes for 426.22 metres on the Creek zone. In 1989, trenching and geophysical and geochemical surveys were completed on the Brenda property. A program of followup trenching was conducted at the Brenda prospect in 1990 on the Creek zone, the White Pass east zone and the EB zone. In 1991 (Assessment Report 22272), hand trenching and rock sampling were completed on the White Pass East zone, the EB zone and the Creek zone. A geochemical survey was completed on the White Pass East zone. In 1992, 2 drillholes were completed on the Creek zone, 4 drillholes on the White Pass East zone and 7 holes on the EB zone. In 1993 (Assessment Report 23385), Romulus Resources drilled 4 deep holes in the White Pass area on the Brenda zone.

In 1990, a total of 45.5 metres of backhoe trenching was conducted on a large silicified breccia/stockwork zone, trending 008 degrees and dipping 68 to 82 degrees east. The zone has an exposed length of approximately 24 metres with a 2 to 4 metres width.

Assay results from 25 samples of trench material indicated anomalous gold and silver. The highest silver and gold values came from samples 12117 and 12130, taken from the centre, lengthwise, along the trench. Assay values from sample 12117 were 4.920 grams per tonne gold and 138.2 grams per tonne silver; and from sample 12130, 3.360 grams per tonne gold and 162.9 grams per tonne silver (Assessment Report 20963).

In 1992, none of the 7 holes drilled intersected ore grade mineralization. The EB zone consists of quartz-breccia with gold and silver values. The highest assay value from drilling was 0.675 grams per tonne gold and 6.5 grams per tonne silver in hole EB 92-04

CAPSULE GEOLOGY

(Assessment Report 22820).

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1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/10
DATE REVISED: 1996/05/09

CODED BY: KJM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 149**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHIP, TOM, DALE,**
CHIP GRP.

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E03E
BC MAP:
LATITUDE: 57 11 40 N
LONGITUDE: 127 02 19 W
ELEVATION: 1260 Metres

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6340736
EASTING: 618519

LOCATION ACCURACY: Within 500M
COMMENTS: A 200-metre long gossan exposed in a creek, located approximately 7.5 kilometres south-southeast of the Shasta occurrence (094E 050), about 280 kilometres north of Smithers (Assessment Report 16371).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
COMMENTS: Iron oxides.
ALTERATION TYPE: Oxidation Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 200 Metres
COMMENTS: A 200-metre long gossan.
STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Sustut	Undefined Formation	
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic			Black Lake Stock
	ISOTOPIC AGE: 204 +/- 9 Ma		
	DATING METHOD: Potassium/Argon		
	MATERIAL DATED: Hornblende		
Lower Jurassic			Black Lake Suite

LITHOLOGY: Granodiorite
Mafic Dike
Augite Plagioclase Phyric Andesite
Polymictic Conglomerate
Sandstone
Shale
Carbonaceous Mudstone
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist Zeolite
COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 2.4000 Grams per tonne
Gold 0.3400 Grams per tonne
COMMENTS: Gold value is from sample 106519; silver value is from sample 106518.
REFERENCE: Assessment Report 16371.

CAPSULE GEOLOGY

The Chip showing is located approximately 7.5 kilometres south-southeast of the Shasta occurrence (094E 050), some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Chip showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane

CAPSULE GEOLOGY

Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Chip showing is underlain by granodiorite of the Black Lake stock (part of the Black Lake Suite). To the east these intrusive rocks are in fault contact with predominantly augite plagioclase pyritic andesite of the Takla Group. To the west, exposures of polymictic conglomerate, sandstone, shale and carbonaceous mudstone comprise the Upper Cretaceous Sustut Group.

Mineralization consists of a 200-metre long gossan heavily mineralized with pyrite. Mafic dikes have intruded what appears to be a fault crosscutting the entire length of the gossan. Rock sampling of this gossan produced generally poor assays. Samples 106518 and 106519, however, did yield assay values of 2.4 grams per tonne silver and 0.30 and 0.34 gram per tonne gold respectively (Assessment Report 16371).

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/11
DATE REVISED: 1992/07/21

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 150**

NATIONAL MINERAL INVENTORY:

NAME(S): **BILL (SOUTH)**, BILL, BILL 1-3,
T-BIRD, T-BIRD 1-8

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E13W
BC MAP:

LATITUDE: 57 46 04 N
LONGITUDE: 127 46 00 W
ELEVATION: 1820 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of mineralized samples 271, 272 and 274, 1.3 kilometres south of the Bill prospect (094E 092). The Bill (South) showing is located 4.5 kilometres west of Park Creek and 13.0 kilometres north-northwest of Spruce Hill (Assessment Report 12559). Dease Lake is 135 kilometres to the northwest.

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

NORTHING: 6403525
EASTING: 573370

COMMODITIES: Gold Copper Zinc

MINERALS

SIGNIFICANT: Gold Arsenopyrite Pyrite Chalcopyrite Sphalerite
COMMENTS: Minerals are inferred from drilling on the Bill prospect (094E 092).

ASSOCIATED: Quartz Carbonate

COMMENTS: See comment for significant minerals.

ALTERATION: Carbonate Sericite Chlorite Silica

COMMENTS: See comment for significant minerals.

ALTERATION TYPE: Carbonate Sericitic Chloritic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound
CLASSIFICATION: Mesothermal Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Permian	Asitka	Undefined Formation	

LITHOLOGY: Greenstone
Quartz Muscovite Carbonate Schist
Graphitic Schist
Chlorite Schist
Marble
Chlorite Feldspar Schist
Chlorite Quartz Banded Schist
Calcareous Chlorite Schist
Mafic Dike

HOSTROCK COMMENTS: A tentative Devonian to Permian age is assigned to these host rocks. Fossils are Mississippian (GSC Paper 80-1B, pages 207-211).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist

COMMENTS: These rocks have undergone at least two phases of deformation.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Grab
COMMODITY: Gold GRADE: 110.0000 Grams per tonne
COMMENTS: Sample 272, one of four anomalous samples taken from this area.
REFERENCE: Assessment Report 12559.

CAPSULE GEOLOGY

The Bill (South) showing, consisting four anomalous rock samples taken from undifferentiated greenstone 1.35 kilometres south of the Bill prospect (094E 092), is located 4.5 kilometres west of Park Creek and 14.5 kilometres north-northwest of Spruce Hill (Assessment Report 12559). Dease Lake is 135 kilometres to the northwest.

CAPSULE GEOLOGY

The showing lies on the eastern edge of the Intermontane Belt near the Kutcho fault, marking the boundary with rocks of the Omineca Crystalline Belt. The showing is underlain by a sequence of low grade metamorphosed volcanic and sedimentary rocks. Early regional mapping correlated these rocks with the Permian Asitka Group based on lithological similarities (Geological Survey of Canada Open File 483). Fossil evidence from later regional mapping gives a Mississippian age for at least part of the sequence (Geological Survey of Canada Paper 80-1B, page 207-211). A tentative Devonian to Permian age is assigned to these rocks.

Five stratigraphic units have been recognized, and are, from oldest to youngest, feldspathic chlorite schist; phyllite, sericite and calcareous sericite schist; massive rhyolite, chert and sericite schist; carbonate; and an upper feldspathic chlorite schist. The rocks are complexly folded and have undergone at least two phases of deformation. They are predominantly calcalkaline with minor alkaline members. Two Early Jurassic plutonic bodies intrude the formation. One is quartz monzonite in composition and the other is diorite. The sequence is similar in many respects to rocks of the Kutcho Formation in the southeastern corner of the Cry Lake map area (NTS 104I).

Lithologies underlying the Bill (South) showing have been subdivided into 9 units based on primary mineralogy and metamorphic grade evident in drill core from the Bill prospect (094E 092). These are: graphite schist, marble, chlorite feldspar schist, chlorite schist, chlorite schist with numerous quartz segregations, spotted chlorite schist, calcareous chlorite schist, quartz-muscovite-carbonate schist and mafic dike. All these rocks are highly deformed showing a strong schistose foliation which obliterates most of the primary volcanic and sedimentary textures.

Alteration observed in drill core at the Bill prospect (094E 092) consists of five types. Oxidation is intense in fault zones and adjacent open fractures. Chlorite alteration is pervasive in dacitic and andesitic protoliths. Sericite alteration is intense in rhyolitic protoliths as almost entire replacement or as sericitized bands preferentially altering certain compositional layering. Quartz veins and bands often exhibit sericite alteration in country rocks along their margins. Multiple episodes of carbonate alteration is pervasive in all units. At least three stages of crystalline quartz carbonate veinlets are present, two of which are typically mineralized with arsenopyrite and pyrite. Silicification is locally present as quartz flooding in tuffaceous protoliths (Assessment Report 12559). These alterations are assumed to be present at the Bill (South) showing also.

A study of mineralized drill core at the Bill prospect (094E 092) with greater than 1 gram per tonne gold revealed several consistent parameters of mineralization. Gold mineralization always occurs within quartz and arsenopyrite plus/minus carbonate veins and usually occurs at both the lower and upper contact of a quartz-muscovite schist unit, often extending into the underlying and overlying greenstones. Quartz-arsenopyrite plus/minus carbonate veins gave a consistent strike of 90 to 110 degrees with a dip varying from 70 degrees south to 70 degrees north. Visible gold was found in most samples with greater than 10 grams per tonne gold, the gold lying along the outer part of the quartz vein just inside the outer arsenopyrite selvage. This unit has all the appearances of the quartz-sericite-pyrite zone within a copper porphyry deposit. The alteration assemblage represents a mesothermal package related to gold mineralization (Assessment Report 12559). Minor chalcopyrite and sphalerite have been observed in drill core.

At the Bill (South) showing, four rock grab samples from undifferentiated greenstone yielded significant gold. Values ranged from 22.0 to 110.0 grams per tonne (Sample 272) (Assessment Report 12559).

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- GSC MAP 14-1973
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 978
REPORT: RGEN0100

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DATE CODED: 1992/12/15
DATE REVISED: 1993/02/09

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 151**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAVE PRICE**, ARTFUL DODGER, BLACK GOSSAN,
CLANCEY, CHAPPELLE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 17 56 N
LONGITUDE: 127 01 56 W
ELEVATION: 1725 Metres

NORTHING: 6352371
EASTING: 618569

LOCATION ACCURACY: Within 500M

COMMENTS: A trench exposing one of several veins associated with a jarositic gossan zone, located approximately 7.5 kilometres south-southeast of the Shasta occurrence (094E 050), about 280 kilometres north of Smithers (Assessment Report 16994).

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Sericite Pyrite
ALTERATION: Alunite Jarosite Clay Pyrite Sericite
Silica
ALTERATION TYPE: Argillic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 600 x 600 Metres STRIKE/DIP:
COMMENTS: A trench, 12 metres long by 2 metres wide by 1.5 metres deep (average) exposes a siliceous sericite-pyrite brecciated vein hosted in a clay-alunite cap roughly 600 metres in diameter (Assessment Report 16994). TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 194.2 +/- 3.6 Ma			
DATING METHOD: Argon/Argon			
MATERIAL DATED: Hornblende			

LITHOLOGY: Crystal Dacitic Ash Flow
Dacite
Lapilli Ash Tuff
Block Tuff
Ash Flow
Lava Flow
Epiclastic

HOSTROCK COMMENTS: Hornblende of the Attycelley Member has been dated at 192.9 +/- 2.7 Ma and from the Saunders Member at 194.2 +/- 3.6 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 215.9000 Grams per tonne
Gold 1.7100 Grams per tonne
COMMENTS: Sample DP-87-1001, a 20-centimetre chip sample from a blasted trench.
REFERENCE: Assessment Report 16994.

CAPSULE GEOLOGY

The Dave Price prospect is located approximately 7.5 kilometres south-southeast of the Shasta occurrence (094E 050), some 280

CAPSULE GEOLOGY

kilometres north of Smithers. The prospect lies within the Omineca-Cassiar mountains at the southern end of the Toadoggone gold camp. It occurs within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Dave Price prospect is underlain by Toadoggone Formation volcanic rocks of the upper volcanic cycle. These consist of a heterogeneous mixture of green, grey and mauve lapilli ash and lesser block tuff, with lesser interspersed ash flows and lava flows and interbedded epiclastics of the Attycelley Member and partly welded, crystal-rich dacitic ash flows of the conformably overlying Saunders Member.

Mineralization consists of a network of quartz-sericite-pyrite brecciated veins in an elliptical-shaped alunite clay cap approximately 600 metres in diameter. Earlier property work identified this clay cap as being part of a jarositic vent rim. Four separate zones of alteration have been identified and collectively comprise the prospect. Pyrite is the only metallic mineral identified within these alteration zones.

Two of these quartz breccia systems were sampled prior to trenching in 1987 and yielded assay values ranging from 0.1 to 1.7 grams per tonne silver and 0.005 to 0.045 gram per tonne gold (Assessment Report 16994). A trench, 12 metres long by 2 metres wide and averaging 1.5 metres deep, was blasted on one of these zones in 1987. Subsequent chip sampling across this trench yielded anomalous silver and gold. Sample DP-87-1001, a 20-centimetre chip sample from the east wall at the southern end of the trench, analysed 1.71 grams per tonne gold, 215.9 grams per tonne silver and 0.005 per cent copper (Assessment Report 16994). Sample material consisted of bluish silica with jarosite, pyrite and altered crystal tuff fragments.

In 1998, Sable Resources Ltd. acquired the property, including the Black Gossan Area and Clancey Zone.

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1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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GSC BULL 270
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GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
ECON GEOL Vol. 86, pp. 529-554, 1991
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986; #221(Nov.18), 1998
IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
PR REL Sable Resources Ltd., Nov.26, 1997; Nov.12, 1998

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 981
REPORT: RGEN0100

BIBLIOGRAPHY

W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW <http://www.sableresources.com>

DATE CODED: 1992/03/12
DATE REVISED: 1992/03/12

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 152**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLDEN NEIGHBOR 2**, GOLDEN NEIGHBOR, GOLDEN NEIGHBOR 1-4,
SAUNDERS 162, SAUNDERS, SAUNDERS NO. 2 GRP.,
SAUNDERS 58-61, SAUNDERS 82-83, SAUNDERS 160-162,
CHAPPELLE, CHAPPELLE 134, CHAPPELLE 136-137,
CHAPPELLE 195, CHAPPELLE 197

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 19 01 N
LONGITUDE: 127 01 06 W
ELEVATION: 1820 Metres

NORTHING: 6354405
EASTING: 619347

LOCATION ACCURACY: Within 500M

COMMENTS: An altered zone hosting quartz stringers and pods, located
approximately 6.5 kilometres northeast of the Baker mine (094E 026),
about 280 kilometres north of Smithers (Assessment Report 20401).

COMMODITIES: Silver Copper Gold

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate Malachite
ALTERATION: Epidote Chlorite Limonite Malachite
COMMENTS: Potassium-argon and argon-argon dates from alteration gangue minerals
at the nearby Lawyers mine (094E 066) and near the White Pass prospect
(094E 147) are both Early Jurassic (Bulletin 86).

ALTERATION TYPE: Argillic Propylitic Oxidation
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Epithermal Epigenetic
DIMENSION: 4 Metres STRIKE/DIP:
COMMENTS: The larger of the two altered zones (higher on the ridge) is 4 metres
wide (Assessment Report 20401).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 194.2 +/- 3.6 Ma
DATING METHOD: Argon/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Pyroxene Biotite Hornblende Flow
Volcanic Breccia
Lapilli Tuff
Crystal Tuff
Lapilli Ash Tuff
Ash Tuff
Ash Flow
Lava Flow
Epiclastic
Welded Dacitic Ash Flow

HOSTROCK COMMENTS: Hornblende of the Attycelley Member is dated at 192.9 +/- 2.7 Ma and
from the Saunders Member at 194.2 +/- 3.6 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1990

COMMODITY	GRADE	
Silver	15.5000	Grams per tonne
Gold	0.0880	Grams per tonne

COMMENTS: Grade is the weighted average of four 1-metre chip samples.
REFERENCE: Assessment Report 20401.

CAPSULE GEOLOGY

The Golden Neighbor 2 showing is located approximately 6.5 kilometres northeast of the Baker mine (094E 026), some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. It occurs within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Golden Neighbor 2 showing is underlain by succession of lower to middle subaerial volcanics and associated volcanoclastic sediments of the upper volcanic cycle of the Toodoggone Formation. The dominant lithologies underlying the showing and east of a limonitic gossan fault zone, are delineated into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. Units west of the limonitic gossan fault zone consist of a heterogeneous mixture of green, grey and mauve lapilli ash and lesser block tuff, with lesser interspersed ash flows and lava flows and interbedded epiclastics of the Attycelley Member and partly welded, crystal-rich dacitic ash flows of the conformably overlying Saunders Member. The area is also disrupted by a conjugate set of northwest and northeast-striking faults that appear to have substantial displacement.

Weak to intense propylitic alteration consists of fracture infilling with epidote and chlorite adjacent to epithermal vein systems. Intense argillic alteration consisting of limonite occurs in the cores of epithermal vein systems.

Mineralization is hosted in two propylitic and argillic-altered zones. The first zone is 4 metres wide and contains quartz and quartz-carbonate stringers and pods up to 20 centimetres wide but with no apparent linear surface extension. Quartz stringers and pods contain disseminated pyrite and lesser chalcopyrite and malachite staining.

A total of four 1-metre chip samples taken from this zone have a weighted average of 15.5 grams per tonne silver and 0.088 gram per tonne gold (Assessment Report 20401). The highest values were 49.0 grams per tonne silver and 0.248 gram per tonne gold (Assessment Report 20401).

The second zone is 50 metres northeast and downslope along a northeast-trending ridge from the first. A total of three chip samples over widths of 30 to 60 centimetres were taken; the weighted average of these samples was 9.34 grams per tonne silver and 0.0475 gram per tonne gold (Assessment Report 20401). The highest values were 61.0 grams per tonne silver and 0.296 gram per tonne gold (Assessment Report 20401).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194

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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1),#66(April 3), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/13
DATE REVISED: 1992/03/13

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 153**

NATIONAL MINERAL INVENTORY:

NAME(S): **CAMP 1**, SAUNDERS, SAUNDERS 1-4,
GOLDEN NEIGHBOR, GOLDEN NEIGHBOR 1-4, SAUNDERS NO. 2 GRP.,
SAUNDERS 58-61, SAUNDERS 82-83, SAUNDERS 160-162,
CHAPPELLE, CHAPPELLE 134, CHAPPELLE 136-137,
CHAPPELLE 195, CHAPPELLE 197

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 19 41 N
LONGITUDE: 127 02 17 W
ELEVATION: 1580 Metres

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6355607
EASTING: 618124

LOCATION ACCURACY: Within 500M
COMMENTS: An outcrop with strong malachite staining along fractures, located approximately 8.5 kilometres east-southeast of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 12716).

COMMODITIES: Silver Gold Copper

MINERALS

SIGNIFICANT: Pyrite Malachite
ALTERATION: Epidote Chlorite Hematite Limonite Malachite
ALTERATION TYPE: Propylitic Argillic Oxidation
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Breccia Stockwork Vein Disseminated
CLASSIFICATION: Epithermal Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
COMMENTS: Potassium-argon and argon-argon dates from alteration gangue minerals at the nearby Lawyers mine (094E 066) and near the White Pass prospect (094E 147) are both Early Jurassic (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE:	194.2 +/- 3.6 Ma		
DATING METHOD:	Argon/Argon		
MATERIAL DATED:	Hornblende		

LITHOLOGY: Feldspar Porphyry
Quartz Feldspar Porphyry
Pyroxene Biotite Hornblende Flow
Breccia
Lapilli Tuff
Crystal Tuff
Lapilli Ash Tuff
Ash Tuff
Ash Flow
Lava Flow

HOSTROCK COMMENTS: Hornblende of the Attycelley Member is dated at 192.9 +/- 2.7 Ma and from the Saunders Member at 194.2 +/- 3.6 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab
COMMODITY
Silver 18.9000 Grams per tonne
Gold 0.1960 Grams per tonne
COMMENTS: Sample F-9-2-1.
REFERENCE: Assessment Report 12716.

CAPSULE GEOLOGY

The Camp 1 showing is located approximately 8.5 kilometres east-southeast of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. It occurs within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Camp 1 showing is underlain by succession of lower to middle subaerial volcanics and associated volcanoclastic sediments of the upper volcanic cycle of the Toodoggone Formation. The dominant lithologies underlying the showing and east of a limonitic gossan fault zone, are divided into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. Units west of the limonitic gossan fault zone consist of a heterogeneous mixture of green, grey and mauve lapilli ash and lesser block tuff, with lesser interspersed ash flows and lava flows and interbedded epiclastics of the Attycelley Member and partly welded, crystal-rich dacitic ash flows of the conformably overlying Saunders Member. The area is also disrupted by a conjugate set of northwest and northeast-striking faults that appear to have substantial displacement.

Weak to intense propylitic alteration consists of fracture infilling with epidote and chlorite adjacent to epithermal vein systems. Intense argillic alteration consisting of limonite occurs in the cores of epithermal vein systems.

Mineralization is hosted in two separate outcrops approximately 200 metres apart. The first outcrop is composed of highly sheared and brecciated hematitic feldspar porphyry with strong malachite staining occurring along fracture surfaces. Sample F-9-2-1, taken from this outcrop, analysed 18.9 grams per tonne silver and 0.196 gram per tonne gold (Assessment Report 12716).

The second outcrop is 200 metres north of the first. It consists of propylitized quartz feldspar porphyry lightly mineralized with disseminated pyrite. Sample F-9-2-2, taken from this outcrop, analysed 1.69 grams per tonne silver and 0.078 gram per tonne gold (Assessment Report 12716).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
- EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
- EMPR BULL 86
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- GSC BULL 270
- GSC OF 306; 483
- GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
- W MINER April, 1982
- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 987
REPORT: RGEN0100

BIBLIOGRAPHY

GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/14
DATE REVISED: 1992/03/14

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 154**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAUNDERS SOUTH**, SAUNDERS, SAUNDERS 1-4,
SAUNDERS NO. 2 GRP., SAUNDERS 58-61, SAUNDERS 82-83,
SAUNDERS 160-162, CHAPPELLE, CHAPPELLE 134,
CHAPPELLE 136-137, CHAPPELLE 195, CHAPPELLE 197,
NE, GO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 19 54 N
LONGITUDE: 127 03 30 W
ELEVATION: 1760 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: An outcrop of highly siliceous and brecciated hornblende feldspar porphyry hosts silicified fractures and quartz veins with minor disseminated pyrite, and is located approximately 7.5 kilometres east-southeast of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 12716).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6355974
EASTING: 616892

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Hematite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epithermal Epigenetic
COMMENTS: Potassium-argon and argon-argon dates on alteration gangue minerals at the nearby Lawyers mine (094E 066) and near the White Pass prospect (094E 147) are both Early Jurassic (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE:	192.9 +/- 2.7 Ma		
DATING METHOD:	Argon/Argon		
MATERIAL DATED:	Hornblende		

LITHOLOGY: Hornblende Feldspar Porphyritic Trachyte
Welded Dacitic Ash Flow
Pyroxene Biotite Hornblende Flow
Volcanic Breccia
Lapilli Tuff
Crystal Tuff
Ash Tuff
Sandstone
Siltstone

HOSTROCK COMMENTS: Volcanic rocks are assigned to the Saunders Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
COMMODITY

YEAR: 1983

COMMODITY	GRADE	
Silver	10.2000	Grams per tonne
Gold	0.1200	Grams per tonne

COMMENTS: Sample S-8-31-4.
REFERENCE: Assessment Report 12716.

CAPSULE GEOLOGY

The Saunders South showing is located approximately 7.5 kilometres east-southeast of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. It is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Saunders South showing is underlain by a succession of lower to middle subaerial volcanics and associated volcanoclastic sediments of the upper volcanic cycle of the Toodoggone Formation. Lithologies underlying the Saunders South showing consist predominantly of partly welded, crystal-rich dacitic ash flows of the Saunders Member. The dominant lithologies east of the showing are divided into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. The area is also disrupted by a conjugate set of northwest and northeast-striking faults that appear to have substantial displacement.

Mineralization is hosted in an outcrop composed of highly siliceous and brecciated, hornblende feldspar porphyritic trachyte. Quartz-hematite veins and veinlets up to 6 centimetres wide carry minor disseminated pyrite. Sample S-8-31-4, taken from this outcrop, analysed 10.2 grams per tonne silver and 0.12 gram per tonne gold (Assessment Report 12716). Assays of additional samples, taken during 1985, did not yield similar gold and silver values.

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
- EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
- EMPR BULL 86
- EMPR ASS RPT 2083, 3362, 4065, 8445, 10349, *12716, 13896, *14487,
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- EMPR GEOLOGY 1977-1981, pp. 156-161
- GSC BULL 270
- GSC OF 306; 483
- GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
- W MINER April, 1982
- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- ECON GEOL Vol. 86, pp. 529-554, 1991
- MIN REV September/October, 1982; July/August, 1986
- WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/14
DATE REVISED: 1992/03/14

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 155**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAUNDERS NORTH**, SAUNDERS, SAUNDERS 1-4,
SAUNDERS NO. 2 GRP., SAUNDERS 58-61, SAUNDERS 82-83,
SAUNDERS 160-162, CHAPPELLE, CHAPPELLE 134,
CHAPPELLE 136-137, CHAPPELLE 195, CHAPPELLE 197,
NE, GO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 20 48 N
LONGITUDE: 127 03 42 W
ELEVATION: 1630 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop at the northern extension of a strong fracture zone, located approximately 7.5 kilometres east-northeast of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 12716).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6357638
EASTING: 616643

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica Limonite
ALTERATION TYPE: Silicific'n Argillic Oxidation
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
COMMENTS: Potassium-argon and argon-argon dates on alteration gangue minerals at the nearby Lawyers mine (094E 066) and near the White Pass prospect (094E 147) are both Early Jurassic (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Feldspar Porphyritic Trachyte
Latite Lava Flow
Latite
Lahar
Epiclastic
Pyroclastic
Welded Dacitic Ash Flow
Pyroxene Biotite Hornblende Flow
Volcanic Breccia
Lapilli Tuff

HOSTROCK COMMENTS: Volcanic rocks are assigned to the Metsantan Member of the Toodoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1983

COMMODITY
Silver
Gold

GRADE	
18.8000	Grams per tonne
0.2280	Grams per tonne

COMMENTS: Sample S-9-1-9.
REFERENCE: Assessment Report 12716.

CAPSULE GEOLOGY

The Saunders North showing is located approximately 7.5 kilometres east-northeast of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. It is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Saunders North showing is underlain by a succession of lower to middle subaerial volcanics and associated volcanoclastic sediments of the upper volcanic cycle of the Toodoggone Formation. Lithologies underlying the Saunders North showing consist predominantly of latite lava flows with interflow lahar and mixed epiclastic and pyroclastic rocks of the Metsantan Member. To the south and west, Toodoggone Formation volcanics are composed of partly welded, crystal-rich dacitic ash flows of the Saunders Member. The dominant lithologies southeast of the showing are divided into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. The area is also disrupted by a conjugate set of northwest and northeast-striking faults that appear to have substantial displacement.

Quartz veins and stringers with pyrite are hosted in an outcrop composed of intensely silicified, oxidized and argillic-altered feldspar porphyritic trachyte. Limonite coating on fracture surfaces is common. Sample S-9-1-9, taken from this outcrop, analysed 18.8 grams per tonne silver and 0.228 gram per tonne gold (Assessment Report 12716). Assays of additional samples taken in 1985 did not reproduce as high gold and silver values. Sample BT-S-31, however, did analyse 0.24 gram per tonne gold and 7.0 grams per tonne silver (Assessment Report 14487).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
- EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
- EMPR BULL 86
- EMPR ASS RPT 2083, 3362, 4065, 8445, 10349, *12716, 13896, *14487,
15512, 20401
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- EMPR GEOLOGY 1977-1981, pp. 156-161
- GSC BULL 270
- GSC OF 306; 483
- GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
- W MINER April, 1982
- N MINER October 13, 1986
- N MINER MAG March 1988, p. 1
- GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
- IPDM Nov/Dec 1983
- ECON GEOL Vol. 86, pp. 529-554, 1991
- MIN REV September/October, 1982; July/August, 1986

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 992
REPORT: RGEN0100

BIBLIOGRAPHY

WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/14
DATE REVISED: 1992/03/14

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 156**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAUNDERS NORTHWEST**, SAUNDERS, SAUNDERS 1-4,
SAUNDERS NO. 2 GRP., SAUNDERS 58-61, SAUNDERS 82-83,
SAUNDERS 160-162, CHAPPELLE, CHAPPELLE 134,
CHAPPELLE 136-137, CHAPPELLE 195, CHAPPELLE 197,
NE, GO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 20 41 N
LONGITUDE: 127 04 44 W
ELEVATION: 1760 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: A quartz vein, on the southeast side of an argillic-altered fault zone located approximately 6.5 kilometres east-northeast of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 14487).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6357392
EASTING: 615613

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
COMMENTS: A silvery mineral is unidentified in one of the veins (Assessment Report 14487).

ASSOCIATED: Quartz
ALTERATION: Limonite

COMMENTS: Potassium-argon and argon-argon dates on alteration gangue minerals at the nearby Lawyers mine (094E 066) and near the White Pass prospect (094E 147) are both Early Jurassic (Bulletin 86).

ALTERATION TYPE: Argillic Oxidation
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 475 x 50 Metres STRIKE/DIP:
COMMENTS: Numerous brecciated quartz veins and quartz breccias occur peripheral to a 475 metre long by 50 metre wide argillic zone along a major northwest-striking fault (Assessment Report 14487).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Quartz Porphyritic Andesite Porphyry
Andesite
Latite
Latite Lava Flow
Dacite
Lahar
Epiclastic
Pyroclastic
Welded Dacitic Ash Flow
Pyroxene Biotite Hornblende Flow

HOSTROCK COMMENTS: Volcanic rocks are assigned to the Metsantan Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab
 COMMODITY

YEAR: 1985

COMMODITY	GRADE	
Silver	11.7000	Grams per tonne
Gold	1.4200	Grams per tonne

COMMENTS: Sample DD-S-5.
 REFERENCE: Assessment Report 14487.

CAPSULE GEOLOGY

The Saunders Northwest showing is located approximately 6.5 kilometres east-northeast of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. The occurrence lies within the Omineca-Cassiar mountains at the southern end of the Toadoggone gold camp. It is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Saunders Northwest showing is underlain by a succession of lower to middle subaerial volcanics and associated volcanoclastic sediments of the upper volcanic cycle of the Toadoggone Formation. Lithologies underlying the Saunders Northwest showing consist predominantly of latite lava flows with interflow lahar and mixed epiclastic and pyroclastic rocks of the Metsantan Member. To the south and west, Toadoggone Formation volcanics are composed of partly welded, crystal-rich dacitic ash flows of the Saunders Member. The dominant lithologies southeast of the showing are delineated into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. The area is also disrupted by a conjugate set of northwest and northeast-striking faults that appear to have substantial displacement.

The Saunders Northwest showing consists of several weakly pyritic, brecciated quartz veins up to 5 centimetres wide forming a zone 10 to 20 centimetres wide, and quartz breccias. These are located peripheral to a 475 metre long by 50 metre wide argillic-altered zone along a major northwest-striking fault.

The best assay values have come from one of several weakly pyritic, brecciated quartz veins in a system 10 to 20 centimetres wide. Sample DD-S-5 from this vein assayed 1.42 grams per tonne gold and 11.7 grams per tonne silver (Assessment Report 14487). Sample DD-S-10, of argillic-altered quartz-eye andesite porphyry, assayed 0.022 gram per tonne gold and 3.4 grams per tonne silver (Assessment Report 14487).

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RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 995
REPORT: RGEN0100

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N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/18
DATE REVISED: 1992/03/18

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 157**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAUNDERS SOUTHWEST**, SAUNDERS, SAUNDERS 1-4,
SAUNDERS NO. 2 GRP., SAUNDERS 58-61, SAUNDERS 82-83,
SAUNDERS 160-162, CHAPPELLE, CHAPPELLE 134,
CHAPPELLE 136-137, CHAPPELLE 195, CHAPPELLE 197,
NE, GO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 19 52 N
LONGITUDE: 127 04 52 W
ELEVATION: 2100 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized breccia zone on a prominent ridge, located approximately
6 kilometres east-southeast of the Lawyers mine (094E 066), about 280
kilometres north of Smithers (Assessment Report 14487).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6355873
EASTING: 615522

COMMODITIES: Silver

MINERALS

SIGNIFICANT: Pyrite Sulphide
COMMENTS: Sample DD-S-14 from this breccia zone contained an unidentified black
sulphide mineral (Assessment Report 14487).

ASSOCIATED: Quartz Calcite

ALTERATION: Limonite

COMMENTS: Potassium-argon and argon-argon dates on alteration gangue minerals
at the nearby Lawyers mine (094E 066) and near the White Pass prospect
(094E 147) are both Early Jurassic (Bulletin 86).

ALTERATION TYPE: Oxidation Argillic
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Breccia Vein
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 2 Metres

COMMENTS: A weakly pyritic and silicified quartz-calcite breccia zone is 1 to 2
metres wide (Assessment Report 14487).

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 192.9 +/- 2.7 Ma
DATING METHOD: Argon/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Welded Dacitic Ash Flow
Dacite
Pyroxene Biotite Hornblende Flow
Volcanic Breccia
Lapilli Tuff
Crystal Tuff
Ash Tuff
Latite Lava Flow
Lahar
Epiclastic

HOSTROCK COMMENTS: Volcanic rocks are assigned to the Saunders Member of the Toodoggone
Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Greenschist
Zeolite

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1985

COMMODITY

GRADE

Silver

10.4000

Grams per tonne

REFERENCE: Assessment Report 14487.

CAPSULE GEOLOGY

The Saunders Southwest showing is located approximately 6 kilometres east-southeast of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The occurrence is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Saunders Southwest showing is underlain by a succession of lower to middle subaerial volcanics and associated volcanoclastic sediments of the upper volcanic cycle of the Toodoggone Formation. Lithologies underlying the Saunders Southwest showing consist predominantly of partly welded, crystal-rich dacitic ash flows of the Saunders Member. To the north and east, Toodoggone Formation volcanics are composed of latite lava flows with interflow lahar and mixed epiclastic and pyroclastic rocks of the Metsantan Member. The dominant lithologies southeast of the showing are delineated into two informal units. The first unit consists of pyroxene-biotite-hornblende porphyry flows with interbedded breccias and lapilli tuffs. The other unit consists of well-bedded lapilli, crystal and ash tuffs with interbedded sandstone and siltstone. The area is also disrupted by a conjugate set of northwest and northeast-striking faults that appear to have substantial displacement.

The Saunders Southwest showing consists of a weakly pyritic (up to 5 per cent) and silicified quartz-calcite breccia zone, 1 to 2 metres wide. Weak argillic alteration, consisting of limonite, is associated with the zone. Sample BT-S-8 from this breccia zone assayed 0.108 gram per tonne gold and 10.4 grams per tonne silver (Assessment Report 14487). Sample DD-S-14 from this zone contained an unidentified black sulphide.

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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W MINER April, 1982
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 998
REPORT: RGEN0100

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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/19
DATE REVISED: 1992/03/19

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 158**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROUND MOUNTAIN EAST**, ROUND MOUNTAIN, R.M. FRACTION,
CASSIDY NO. 1 GRP., GWP, GWP 27-28,
GWP 30, GWP 40, GWP 42,
BEAR, DOUG, JIM

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 21 57 N
LONGITUDE: 127 14 38 W

NORTHING: 6359473
EASTING: 605624

ELEVATION: 1530 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: A zone of alteration with minor quartz veining located approximately
4.7 kilometres northwest of the Lawyers mine (094E 066), about 280
kilometres north of Smithers (Assessment Report 15469).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica Clay Goethite Limonite Sericite
ALTERATION TYPE: Argillic Silicific'n Oxidation
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma

DATING METHOD: Argon/Argon

MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 200 x 150 Metres STRIKE/DIP: 335/
COMMENTS: An argillic and silicified alteration zone. The isotopic date is from
potassium feldspar from the Cliff Creek zone of the Lawyers mine (094E
066) (Bulletin 86).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Andesite Porphyry
Volcanic Conglomerate
Porphyritic Trachyandesite Flow
Porphyritic Trachyandesite Tuff
Trachyandesite
Latite Lava Flow
Latite
Lahar
Epiclastic
Pyroclastic

HOSTROCK COMMENTS: Volcanic rocks are assigned to the Metsantan Member of the Toodoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 2.5900 Grams per tonne
Gold 2.0000 Grams per tonne

COMMENTS: Sample 328.
REFERENCE: Assessment Report 15469.

CAPSULE GEOLOGY

The Round Mountain East showing is located approximately 4.7 kilometres northwest of the Lawyers mine (094E 066), some 280 kilometres north of Smithers and is exposed on the eastern slopes of Round Mountain, about 2 kilometres south of the confluence of Moosehorn Creek and the Toodoggone River. The showing lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Round Mountain East showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Round Mountain is underlain mostly by greenish andesite porphyry and volcanic conglomerate but hostrocks have relict textures of argillic-altered porphyritic trachyandesite flows and tuffs, part of a larger package of Toodoggone Formation volcanics assigned to the Metsantan Member. Other lithologies of the Metsantan Member include mostly latite lava flows with interflow lahar, and mixed epiclastic and pyroclastic rocks (Bulletin 86). These rocks are cut by the Cliff Creek fault, along which the showing lies.

The Round Mountain East showing consists of a zone of argillic alteration and silicification with minor quartz veining and strikes about 335 degrees. The zone is believed to be an extension of the Cliff Creek zone at the nearby Lawyers mine (094E 066). Clays and sericite replacing feldspars and mafic minerals, goethite replacing pyrite veinlets and limonite staining comprise argillic alteration within this zone. A few areas of silicification, consisting of quartz and clays, occur within this zone of argillic alteration. The zone is about 200 metres long by 150 metres wide. Areas of strong argillic alteration with silicification continue 1800 metres on a bearing of 330 degrees where they crop out above the banks of the Toodoggone River.

Several rock samples were taken from and adjacent to this zone with assay results generally yielding only background values. One sample, however, did analyse 2.59 grams per tonne silver and 2.00 grams per tonne gold (Assessment Report 17299).

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GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986

RUN DATE: 26-Jun-2003
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MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1001
REPORT: RGEN0100

BIBLIOGRAPHY

WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/23
DATE REVISED: 1992/03/23

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 159**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROUND MOUNTAIN WEST**, ROUND MOUNTAIN, R.M. FRACTION,
CASSIDY NO. 2 GRP., GWP, GWP 27-28,
GWP 30, GWP 40, GWP 42,
BEAR, DOUG, JIM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W 094E06E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6359584
EASTING: 605120

LATITUDE: 57 22 01 N
LONGITUDE: 127 15 08 W
ELEVATION: 1545 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: A zone of quartz stockworks exposed intermittently over a length of 500 metres, located approximately 5.5 kilometres northwest of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 18847).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite Chalcedony
ASSOCIATED: Quartz
ALTERATION: Silica Limonite Epidote
ALTERATION TYPE: Silicific'n Epidote Oxidation
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma DATING METHOD: Argon/Argon MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epithermal Epigenetic
SHAPE: Irregular
DIMENSION: 500 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The showing is exposed intermittently over 500 metres with widths up to 50 metres. The isotopic date was derived from potassium feldspar from the Cliff Creek zone of the Lawyers mine (094E 066).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 200 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite Porphyry
Andesite
Volcanic Conglomerate
Porphyritic Trachyandesite Flow
Porphyritic Trachyandesite Tuff
Trachyandesite
Latite Lava Flow
Latite
Lahar

HOSTROCK COMMENTS: Volcanic rocks are assigned to the Metsantan Member of the Toodoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab
COMMODITY
Silver 6.8000 Grams per tonne
Gold 0.8000 Grams per tonne
COMMENTS: Sample 326.
REFERENCE: Assessment Report 15469.

CAPSULE GEOLOGY

The Round Mountain West showing is located approximately 5.5 kilometres northwest of the Lawyers mine (094E 066), some 280 kilometres north of Smithers and is exposed on the western slopes of Round Mountain about 2 kilometres south of the confluence of Moosehorn Creek and the Toodoggone River. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The Round Mountain West showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Round Mountain is underlain mostly by greenish andesite porphyry and volcanic conglomerate but have relict textures of argillic-altered porphyritic trachyandesite flows and tuffs, part of a larger package of Toodoggone volcanics assigned to the Metsantan Member. Other lithologies of the Metsantan Member include mostly latite lava flows with interflow lahar, and mixed epiclastic and pyroclastic rocks.

The showing consists of a zone of quartz-chalcedony veins, stockworks and replacement masses exposed intermittently over 500 metres length and irregular widths, from a few to 50 metres. The zone of silicification follows the same northerly strike as a fault, about 200 metres to the east. This fault intersects the Cliff Creek fault immediately to the north of the Round Mountain West showing. In the zone of silicification, the rocks are composed of grey glassy quartz. Veins and stockworks are a few millimetres in width. Vuggy quartz fills small open spaces from 2 to 3 millimetres wide and is commonly stained by limonite. Feldspars are partially replaced by epidote.

Several samples were taken from this zone, most of which yielded only background or weakly anomalous values for silver and gold. Sample 326, taken from the northern end of this silicified zone, analysed 6.8 grams per tonne silver and 0.80 gram per tonne gold (Assessment Report 15469). Sample 324, taken from the adjacent Kodah 1 occurrence (094E 068) at the southern end of the zone, analysed 7.7 grams per tonne silver and 0.085 gram per tonne gold (Assessment Report 15469).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 1004
REPORT: RGEN0100

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MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/03/24
DATE REVISED: 1992/07/22

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 160**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER POND (AMETHYST)**, SILVER POND GROUP, SILVER CREEK,
SILVER POND, SILVER POND FR., ASAP,
SILVER SUN, SILVER PEAK FR., SILVER GRIZZLY FR.,
SILVER CLOUD 1-3, SILVER MARTEN, SILVER BULLET FR.

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 19 13 N
LONGITUDE: 127 12 02 W
ELEVATION: 1830 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6354471
EASTING: 608364

COMMENTS: The centre of an intensely hydrothermally altered and mineralized zone on the Silver Creek claim (Assessment Report 16952, Figure 87-5).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite Magnetite
COMMENTS: Chalcopyrite, galena, sphalerite, tetrahedrite, native silver, acanthite and electrum are reported from the Silver Pond (North) (094E 069), Silver Creek (094E 075) and West (094E 163) occurrences.
ASSOCIATED: Quartz Chalcedony Silica
ALTERATION: Silica Quartz Alunite Kaolinite Montmorillonite
Dickite Illite Sericite

COMMENTS: Minor amounts of barite, fluorite, limonite and pyrite are also present. The alteration zone is 2 kilometres across and covers much of the Silver Pond property area (Forster, 1984).

ALTERATION TYPE: Silicific'n Sericitic Argillic Potassic
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma DATING METHOD: Argon/Argon MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
DIMENSION: 400 x 200 x 20 Metres STRIKE/DIP: 335/ TREND/PLUNGE:
COMMENTS: A zone of multiphase chalcedony and silica veining and brecciation. An age date on potassium feldspar from the Cliff Creek zone of the Lawyers mine (094E 066) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 200 +/- 7 Ma		
	DATING METHOD: Potassium/Argon		
MATERIAL DATED: Biotite			
Cretaceous	Sustut	Tango Creek	

LITHOLOGY: Quartz Andesite Crystal Tuff
Andesite
Aphanitic Tuff
Welded Trachytic Tuff
Trachyte Crystal Lapilli Tuff
Trachyte
Greywacke

HOSTROCK COMMENTS: Toodoggone volcanic rocks are assigned to the Metsantan Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1987

COMMODITY	GRADE	
Silver	80.0000	Grams per tonne
Gold	6.2500	Grams per tonne

COMMENTS: Grades are from a sample over a 1-metre core length at 185 metres depth.

REFERENCE: Assessment Report 16952.

CAPSULE GEOLOGY

The Lower Jurassic Toodoggone Formation (Hazelton Group) volcanic rocks form a northwest-trending belt, at least 90 kilometres long and 35 kilometres wide, preserved between undivided Lower to Middle Jurassic Hazelton Group rocks to the east and the Upper Cretaceous to Eocene (?) Sustut Group rocks to the west. Where observed, they rest structurally on Upper Triassic Takla Group rocks.

Toodoggone pyroclastic and epiclastic volcanic rocks are a predominantly calcalkaline andesitic to dacitic subaerial succession. The region as a whole resembles a synclorium in section from northwest to southeast. Potassium-argon studies of hornblende and biotite indicate the age of Toodoggone volcanism ranges from 204 to 182 Ma. This age appears to be divisible into two main groups: an older, lower stage of volcanism dominated by andesitic pyroclastics and flows characterized by widespread propylitic and zeolitic alteration; and a younger, upper stage of volcanism dominated by andesitic ash-flow tuffs which generally lack significant epithermal alteration. All the known epithermal gold-silver deposits and occurrences are restricted to the lower Toodoggone Formation volcanics and underlying units (Fieldwork 1988).

Toodoggone volcanic rocks display broad open folds or homoclines with attitudes generally less than 25 degrees dipping predominantly to the west. The overlying Sustut Group sedimentary rocks are structurally unaffected and are horizontal. A northwest-trending set of younger, steeply-dipping faults and synvolcanic half-graben margins are the dominant structure in the region. Major structural breaks are postulated to have been caused, or be the result of, a northwest-trending line of volcanic centres. Small stocks are also aligned northwest, suggesting they were also influenced by the same structural trend. Subsequent to volcanism and intrusion, young faults are recognizable as northwest-trending lineaments. Major north-northwest fault systems are from west to east: Attorney; Moosehorn-McClair; and Saunders-Jock. Most prominent gossans are aligned along this configuration of faults. The Attorney fault system passes through the Lawyers property.

Two distinct mappable sequences of the Toodoggone volcanics, consisting of an older pyroclastic quartz andesite crystal tuff sequence (Adoogacho Member) and a younger trachyandesite sequence (Metsantan Member), are evident on the Silver Pond property. These volcanics strike northeast and dip 5 to 20 degrees to the northwest. The two sequences are intruded by steeply dipping rhyolite to rhyodacite dikes and are generally associated with steeply dipping fault zones. These are overlain by pyroxene basalt. The volcanic sequence in stratigraphic order is composed of, a) quartz andesite crystal tuff, b) fine-grained to aphanitic chocolate brown tuff, c) welded trachyte tuff, and d) trachyte crystal and crystal lapilli tuff with interbedded volcanogenic greywacke. Several north-northwest striking faults have been identified and are slightly offset by younger east-striking faults. The north-northwest striking faults apparently were the conduits for the mineralizing fluids which also gave rise to mineralization at the Silver Pond (North) (094E 069), Silver Creek (094E 075), South (094E 161), Ridge (094E 162) and West (094E 163) prospects. The Toodoggone volcanics are affected by widespread weak propylitic alteration and weak silicification.

The southern portion of the Silver Pond property is capped by younger Sustut Group conglomerates in slight angular unconformity with the underlying Toodoggone volcanics.

Alteration associated with structurally controlled epithermal mineralization, in the area, consists of pervasive silicification grading outward into weaker silicification, sericitization, argillic and potassic alteration. An alteration zone, two kilometres across, covers much of the area and is marked by a gossan of abundant goethite, jarosite and hematite. Quartz, alunite, kaolinite, montmorillonite, dickite, illite, sericite, and minor amounts of barite, fluorite, limonite and pyrite comprise secondary minerals in intermediate to advanced argillic-altered zones (Forster, 1984).

Two general styles of acid-sulphate type epithermal gold-silver mineralization occur on the Silver Pond property. These consist of vein and breccia-type ore shoots and pods, such as the Silver Pond

CAPSULE GEOLOGY

(West) prospect (094E 163) and the Silver Pond (Silver Creek) prospect (094E 075); and high-level stockwork-type mineralization such as the Silver Pond (North) prospect (094E 069). Gold and silver are generally absent from intensely altered regions in the area, with pyrite and magnetite being the only visible metallic minerals (Forster, 1984).

The Silver Pond (Amethyst) prospect is postulated to be the southern extension of the Lawyers mine-Cliff Creek zone (094E 066).

A magnetic survey on the Silver Pond (Amethyst) prospect showed a pronounced magnetic trough trending north-northwest. The eastern margin of this magnetic low correlates with a zone of intensive multiphase chalcedony and silica veining and brecciation. The zone is approximately 400 metres long by 20 metres wide and strikes 335 degrees.

Seven holes, totalling 1630 metres, have intersected the zone above a depth of 85 metres. Two deep holes have intersected the zone with intersections analysing 6.25 grams per tonne gold and 80.0 grams per tonne silver over a 1-metre core length and 1.88 grams per tonne gold and 15.3 grams per tonne silver over a 3-metre core length at depths of 185 metres and 282 metres below the surface respectively (Assessment Report 16952).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
EMPR BULL 86
EMPR ASS RPT 8300, 10047, 11216, 12877, 12911, 14700, *16952
EMPR MAP 61 (1985)
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986; November 16, 1987
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1),#127(July 3), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983; Jan/Feb, 1984
ECON GEOL Vol. 86, pp. 529-554, 1991
V STOCKWATCH June 18, September 4, November 6, 1987
MIN REV September/October, 1982; July/August, 1986
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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DATE CODED: 1992/03/26
DATE REVISED: 1992/03/26

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 161**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER POND (SOUTH)**, SILVER POND GROUP, SILVER CREEK,
SILVER POND, SILVER POND FR., ASAP,
SILVER SUN, SILVER PEAK FR., SILVER GRIZZLY FR.,
SILVER CLOUD 1-3, SILVER MARTEN, SILVER BULLET FR.

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 19 09 N
LONGITUDE: 127 12 30 W
ELEVATION: 1860 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6354335
EASTING: 607899

COMMENTS: The location of drillhole 22 which intersected a hydrothermally altered and mineralized zone on the Silver Creek claim (Assessment Report 16952; Figure 87-5).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite Magnetite
COMMENTS: Chalcopyrite, galena, sphalerite, tetrahedrite, native silver acanthite and electrum are reported from the Silver Pond (North) (094E 069), Silver Creek (094E 075) and West (094E 163) occurrences.
ASSOCIATED: Silica
ALTERATION: Silica Quartz Alunite Kaolinite Montmorillonite
Dickite Illite Sericite

COMMENTS: Minor amounts of barite, fluorite, limonite and pyrite are also present in an alteration zone 2 kilometres across which covers much of the Silver Pond property area (Forster, 1984).

ALTERATION TYPE: Silicific'n Sericitic Argillic Potassic
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma DATING METHOD: Argon/Argon MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag; low sulphidation
COMMENTS: The isotopic date was derived from potassium feldspar taken from the Cliff Creek zone of the Lawyers mine (094E 066) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE:	200 +/- 7 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Cretaceous	Sustut	Tango Creek	

LITHOLOGY: Andesite
Quartz Andesite Crystal Tuff
Aphanitic Tuff
Welded Trachytic Tuff
Trachyte Crystal Lapilli Tuff
Trachyte
Greywacke

HOSTROCK COMMENTS: Toodoggone volcanic rocks are assigned to the Metsantan Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Drill Core

YEAR: 1987

COMMODITY	GRADE	
Silver	22.1240	Grams per tonne
Gold	2.1550	Grams per tonne

COMMENTS: Grades are the weighted average of 8 intersections with greater than 1 gram per tonne precious metals over 1-metre true width.

REFERENCE: Assessment Report 16952.

CAPSULE GEOLOGY

The Lower Jurassic Toodoggone Formation (Hazelton Group) volcanic rocks form a northwest-trending belt, at least 90 kilometres long and 35 kilometres wide, preserved between undivided Lower to Middle Jurassic Hazelton Group rocks to the east and the Upper Cretaceous to Eocene (?) Sustut Group rocks to the west. Where observed, they rest structurally on Upper Triassic Takla Group rocks.

Toodoggone pyroclastic and epiclastic volcanic rocks are a predominantly calcalkaline andesitic to dacitic subaerial succession. The region as a whole resembles a synclinorium in section from northwest to southeast. Potassium-argon studies of hornblende and biotite indicate the age of Toodoggone volcanism ranges from 204 to 182 Ma. This age appears to be divisible into two main groups: an older, lower stage of volcanism dominated by andesitic pyroclastics and flows characterized by widespread propylitic and zeolitic alteration; and a younger, upper stage of volcanism dominated by andesitic ash-flow tuffs which generally lack significant epithermal alteration. All the known epithermal gold-silver deposits and occurrences are restricted to the lower Toodoggone Formation volcanics and underlying units (Fieldwork 1988).

Toodoggone volcanic rocks display broad open folds or homoclines with attitudes generally less than 25 degrees dipping predominantly to the west. The overlying Sustut Group sedimentary rocks are structurally unaffected and are horizontal. A northwest-trending set of younger, steeply dipping faults and synvolcanic half-graben margins are the dominant structure in the region. Major structural breaks are postulated to have been caused, or be the result of, a northwest-trending line of volcanic centres. Small stocks are also aligned northwest, suggesting they were also influenced by the same structural trend. Subsequent to volcanism and intrusion, young faults are recognizable as northwest-trending lineaments. Major north-northwest fault systems are from west to east: Attorney; Moosehorn-McClair; and Saunders-Jock. Most prominent gossans are aligned along this configuration of faults. The Attorney fault system passes through the Lawyers property.

Two distinct mappable sequences of the Toodoggone volcanics, consisting of an older pyroclastic quartz andesite crystal tuff sequence (Adoogacho Member) and a younger trachyandesite sequence (Metsantan Member), are evident on the Silver Pond property. These volcanics strike northeast and dip 5 to 20 degrees to the northwest. The two sequences are intruded by steeply dipping rhyolite to rhyodacite dikes and are generally associated with steeply dipping fault zones. These are overlain by pyroxene basalt. The volcanic sequence in stratigraphic order is composed of: a) quartz andesite crystal tuff, b) fine-grained to aphanitic chocolate brown tuff, c) welded trachyte tuff, and d) trachyte crystal and crystal lapilli tuff with interbedded volcanogenic greywacke. Several north-northwest striking faults have been identified and are slightly offset by younger east-striking faults. The north-northwest striking faults apparently were the conduits for the mineralizing fluids which also gave rise to mineralization at the Silver Pond (North) (094E 069), Silver Creek (094E 075), Amethyst (094E 160), Ridge (094E 162) and West (094E 163) prospects. The Toodoggone volcanics are affected by widespread weak propylitic alteration and weak silicification.

The southern portion of the Silver Pond property is capped by younger Sustut Group conglomerates in slight angular unconformity with the underlying Toodoggone volcanics.

Alteration associated with structurally controlled epithermal mineralization, in the area, consists of pervasive silicification grading outward into weaker silicification, sericitization, argillic and potassic alteration. An alteration zone, two kilometres across, covers much of the area and is marked by a gossan of abundant goethite, jarosite and hematite. Quartz, alunite, kaolinite, montmorillonite, dickite, illite, sericite, and minor amounts of barite, fluorite, limonite and pyrite comprise secondary minerals in intermediate to advanced argillic-altered zones (Forster, 1984).

Two general styles of acid-sulphate type epithermal gold-silver mineralization occur on the Silver Pond property. These consist of vein and breccia-type ore shoots and pods, such as the Silver Pond

CAPSULE GEOLOGY

(West) prospect (094E 163) and the Silver Pond (Silver Creek) prospect (094E 075); and high-level stockwork-type mineralization such as the Silver Pond (North) prospect (094E 069). Gold and silver are generally absent from intensely altered regions in the area, with pyrite and magnetite being the only visible metallic minerals (Forster, 1984).

The Silver Pond (South) prospect is regarded as a southwest splay off the Cliff Creek zone of the Lawyers mine (094E 066). It was originally defined by a coinciding magnetic low, a VLF conductor, and a geochemical gold anomaly peaking at 1.95 grams per tonne (Assessment Report 16952).

The Silver Pond (South) prospect is characterized by narrow silica stringers in hydrothermally altered andesite. Gold mineralization is confined to millimetre and centimetre-wide silica stringers and veinlets. The zone is open at depth and along strike.

Analytical results from a number of interesting intersections were obtained in 5 of 7 drillholes in this zone in 1987. The highest gold and silver values were 14.6 grams per tonne and 24.00 grams per tonne respectively over a 2-centimetre wide stringer. The weighted averages of 8 significant intersections with 1 gram per tonne or greater gold and silver are, 2.155 grams per tonne and 22.124 grams per tonne respectively over 1-metre true width (Assessment Report 16952).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
ECON GEOL Vol. 86, pp. 529-554, 1991
GCNL #23(Feb.1),#127(July 3), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983; Jan/Feb, 1984
MIN REV September/October, 1982; July/August, 1986
N MINER October 13, 1986; November 16, 1987
N MINER MAG March 1988, p. 1
V STOCKWATCH June 18, September 4, November 6, 1987
W MINER April, 1982
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DATE CODED: 1992/03/26
DATE REVISED: 1992/03/26

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 162**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER POND (RIDGE)**, SILVER POND GROUP, SILVER CREEK,
SILVER POND, SILVER POND FR., ASAP,
SILVER SUN, SILVER PEAK FR., SILVER GRIZZLY FR.,
SILVER CLOUD 1-3, SILVER MARTEN, SILVER BULLET FR.

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 18 18 N
LONGITUDE: 127 13 20 W
ELEVATION: 1765 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The centre of an intensely hydrothermally altered and mineralized zone on the Silver Creek claim (Assessment Report 16952, Figure 87-5).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6352736
EASTING: 607104

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite Magnetite
COMMENTS: Chalcopyrite, galena, sphalerite, tetrahedrite, native silver, acanthite and electrum are reported from the Silver Pond (North) (094E 069), Silver Creek (094E 075) and West (094E 163) occurrences.
ASSOCIATED: Quartz
ALTERATION: Silica Quartz Alunite Kaolinite Montmorillonite
Dickite Illite Sericite
COMMENTS: Minor amounts of barite, fluorite, limonite and pyrite are also present in an alteration zone 2 kilometres across that covers much of the Silver Pond property (Forster, 1984).
ALTERATION TYPE: Silicific'n Sericitic Argillic Potassic
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epithermal
TYPE: H05 Epithermal Au-Ag: low sulphidation
COMMENTS: A zone of quartz veinlets and a stockwork of quartz stringers. A date on potassium feldspar from the Cliff Creek zone of the Lawyers mine (094E 066) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE:	200 +/- 7 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Cretaceous	Sustut	Tango Creek	

LITHOLOGY: Quartz Andesite Crystal Tuff
Andesite
Aphanitic Tuff
Welded Trachytic Tuff
Trachyte
Trachyte Crystal Lapilli Tuff
Greywacke

HOSTROCK COMMENTS: Toodoggone volcanic rocks are assigned to the Metsantan Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Spatsizi Plateau
RELATIONSHIP:
GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
COMMODITY: Gold

YEAR: 1987

GRADE: 1.2900 Grams per tonne

COMMENTS: Sample is from drillhole SP87-57 over a 0.71 metre true width.
REFERENCE: Assessment Report 16952.

CAPSULE GEOLOGY

The Lower Jurassic Toodoggone Formation (Hazelton Group) volcanic rocks form a northwest-trending belt, at least 90 kilometres long and 35 kilometres wide, preserved between undivided Lower to Middle Jurassic Hazelton Group rocks to the east and the Upper Cretaceous to Eocene (?) Sustut Group rocks to the west. Where observed, they rest structurally on Upper Triassic Takla Group rocks.

Toodoggone pyroclastic and epiclastic volcanic rocks are a predominantly calcalkaline andesitic to dacitic subaerial succession. The region as a whole resembles a synclinorium in section from northwest to southeast. Potassium-argon studies of hornblende and biotite indicate the age of Toodoggone volcanism ranges from 204 to 182 Ma. This age appears to be divisible into two main groups: an older, lower stage of volcanism dominated by andesitic pyroclastics and flows characterized by widespread propylitic and zeolitic alteration; and a younger, upper stage of volcanism dominated by andesitic ash-flow tuffs which generally lack significant epithermal alteration. All the known epithermal gold-silver deposits and occurrences are restricted to the lower Toodoggone Formation volcanics and underlying units (Fieldwork 1988).

Toodoggone volcanic rocks display broad open folds or homoclines with attitudes generally less than 25 degrees dipping predominantly to the west. The overlying Sustut Group sedimentary rocks are structurally unaffected and are horizontal. A northwest-trending set of younger, steeply dipping faults and synvolcanic half-graben margins are the dominant structure in the region. Major structural breaks are postulated to have been caused, or be the result of, a northwest-trending line of volcanic centres. Small stocks are also aligned northwest, suggesting they were also influenced by the same structural trend. Subsequent to volcanism and intrusion, young faults are recognizable as northwest-trending lineaments. Major north-northwest fault systems are from west to east: Attorney; Moosehorn-McClair; and Saunders-Jock. Most prominent gossans are aligned along this configuration of faults. The Attorney fault system passes through the Lawyers property.

Two distinct mappable sequences of the Toodoggone volcanics, consisting of an older pyroclastic quartz andesite crystal tuff sequence (Adoogacho Member) and a younger trachyandesite sequence (Metsantan Member), are evident on the Silver Pond property. These volcanics strike northeast and dip 5 to 20 degrees to the northwest. The two sequences are intruded by steeply dipping rhyolite to rhyodacite dikes and are generally associated with steeply dipping fault zones. These are overlain by pyroxene basalt. The volcanic sequence in stratigraphic order is composed of, a) quartz andesite crystal tuff, b) fine-grained to aphanitic chocolate brown tuff, c) welded trachyte tuff, and d) trachyte crystal and crystal lapilli tuff with interbedded volcanogenic greywacke. Several north-northwest striking faults have been identified and are slightly offset by younger east-striking faults. The north-northwest striking faults apparently were the conduits for the mineralizing fluids which gave rise to mineralization at the Silver Pond (North) (094E 069), Silver Creek (094E 075), Amethyst (094E 160), South (094E 161) and West (094E 163) prospects. The Toodoggone volcanics are affected by widespread weak propylitic alteration and weak silicification.

The southern portion of the Silver Pond property is capped by younger Sustut Group conglomerates in slight angular unconformity with the underlying Toodoggone volcanics.

Alteration associated with structurally controlled epithermal mineralization, in the area, consists of pervasive silicification grading outward into weaker silicification, sericitization, argillic and potassic alteration. An alteration zone, two kilometres across, covers much of the area and is marked by a gossan of abundant goethite, jarosite and hematite. Quartz, alunite, kaolinite, montmorillonite, dickite, illite, sericite, and minor amounts of barite, fluorite, limonite and pyrite comprise secondary minerals in intermediate to advanced argillic-altered zones (Forster, 1984).

Two general styles of acid-sulphate type epithermal gold-silver mineralization occur on the Silver Pond property. These consist of vein and breccia-type ore shoots and pods, such as the Silver Pond (West) prospect (094E 163) and the Silver Pond (Silver Creek) prospect (094E 075); and high-level stockwork-type mineralization

CAPSULE GEOLOGY

such as the Silver Pond (North) prospect (094E 069). Gold and silver are generally absent from intensely altered regions in the area, with pyrite and magnetite being the only visible metallic minerals (Forster, 1984).

The Silver Pond (Ridge) prospect is characterized by a linear resistivity high, the occurrence of gold-mineralized float and a partially coincident gold soil anomaly. These surveys were carried out as a followup to the discovery of siliceous material, from which a grab sample assayed 5.28 grams per tonne gold and 5.34 grams per tonne silver (Assessment Report 14700). Another grab sample taken approximately 125 metres along strike analysed 2.40 grams per tonne silver and 3.40 grams per tonne gold (Assessment Report 14700). The zone outlined is 220 metres long by 20 metres wide and consists of quartz veinlets, 0.3 to 10-centimetres wide, and a stockwork of quartz stringers.

The Silver Pond (Ridge) prospect was tested by 3 drillholes in 1987. The best assays were 1.29 grams per tonne gold over a 0.71-metre true width, associated with 0.3 to 10-centimetre wide quartz veins in hole SP87-57; and 3.96 grams per tonne gold over a 0.34-metre true width, associated with grey quartz stringers in hole SP87-59 (Assessment Report 16952).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986; November 16, 1987
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1),#127(July 3), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983; Jan/Feb, 1984
ECON GEOL Vol. 86, pp. 529-554, 1991
V STOCKWATCH June 18, September 4, November 6, 1987
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
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DATE CODED: 1992/03/26
DATE REVISED: 1992/03/26

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 163**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER POND (WEST)**, SILVER POND GROUP, SILVER CREEK,
SILVER POND, SILVER POND FR., ASAP,
SILVER SUN, SILVER PEAK FR., SILVER GRIZZLY FR.,
SILVER CLOUD 1-3, SILVER MARTEN, SILVER BULLET FR.,
WO

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 19 00 N
LONGITUDE: 127 13 18 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The centre of an intensely altered and mineralized zone on the Silver
Creek claim (Assessment Report 16952, Figure 87-5).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6354036
EASTING: 607104

COMMODITIES: Gold Silver Lead Copper Zinc

MINERALS

SIGNIFICANT: Galena Chalcopyrite Sphalerite Electrum Acanthite
ASSOCIATED: Silica Calcite Epidote Chlorite Pyrite
Laumontite Amethyst
ALTERATION: Silica Chlorite Pyrite Epidote Albite
ALTERATION TYPE: Silicific'n Propylitic Sericitic Argillic Potassic
MINERALIZATION AGE: Lower Jurassic
ISOTOPIC AGE: 189.7 +/- 2.6 Ma
DATING METHOD: Argon/Argon
MATERIAL DATED: Potassium feldspar

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
DIMENSION: 400 x 200 x 40 Metres STRIKE/DIP: 120/
COMMENTS: Diamond drilling intersected mineralization over a 400-metre length
and a 200-metre depth. The stockwork zone is up to 40 metres wide.
Isotopic age from Lawyers (094E 066) mineralizing event (Bulletin 86).
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			
Cretaceous	Sustut	Tango Creek	

LITHOLOGY: Porphyritic Andesite Flow
Andesite
Agglomerate
Crystal Tuff
Lapilli Tuff
Rhyolite Dike
Quartz Andesite Crystal Tuff
Aphanitic Tuff
Welded Trachytic Tuff
Trachyte Crystal Lapilli Tuff

HOSTROCK COMMENTS: Toodoggone volcanic rocks are assigned to the Metsantan Member.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Spatsizi Plateau
RELATIONSHIP:
GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: WEST

REPORT ON: Y

CATEGORY: Measured
QUANTITY: 47819 Tonnes
COMMODITY: Gold GRADE: 6.8500 YEAR: 1987
Grams per tonne

COMMENTS: The cutoff grade is 3.0 grams per tonne over an average true width of 1.40 metres from zones A, B and C.

REFERENCE: Assessment Report 16952.

CAPSULE GEOLOGY

The Lower Jurassic Toodoggone Formation (Hazelton Group) volcanic rocks form a northwest-trending belt, at least 90 kilometres long and 35 kilometres wide, preserved between undivided Lower to Middle Jurassic Hazelton Group rocks to the east and the Upper Cretaceous to Eocene (?) Sustut Group rocks to the west. Where observed, they rest structurally on Upper Triassic Takla Group rocks.

Toodoggone pyroclastic and epiclastic volcanic rocks are a predominantly calcalkaline andesitic to dacitic subaerial succession. The region as a whole resembles a synclinorium in section from northwest to southeast. Potassium-argon studies of hornblende and biotite indicate the age of Toodoggone volcanism ranges from 204 to 182 Ma. This age appears to be divisible into two main groups: an older, lower stage of volcanism dominated by andesitic pyroclastics and flows characterized by widespread propylitic and zeolitic alteration; and a younger, upper stage of volcanism dominated by andesitic ash-flow tuffs which generally lack significant epithermal alteration. All the known epithermal gold-silver deposits and occurrences are restricted to the lower Toodoggone Formation volcanics and underlying units (Fieldwork 1988).

Toodoggone volcanic rocks display broad open folds or homoclines with attitudes generally less than 25 degrees dipping predominantly to the west. The overlying Sustut Group sedimentary rocks are structurally unaffected and are horizontal. A northwest-trending set of younger, steeply dipping faults and synvolcanic half-graben margins are the dominant structure in the region. Major structural breaks are postulated to have been caused, or be the result of, a northwest-trending line of volcanic centres. Small stocks are also aligned northwest, suggesting they were also influenced by the same structural trend. Subsequent to volcanism and intrusion, young faults are recognizable as northwest-trending lineaments. Major north-northwest fault systems are from west to east: Attorney; Moosehorn-McClair; and Saunders-Jock. Most prominent gossans are aligned along this configuration of faults. The Attorney fault system passes through the Lawyers property.

Two distinct mappable sequences of the Toodoggone volcanics, consisting of an older pyroclastic quartz andesite crystal tuff sequence (Adogacho Member) and a younger trachyandesite sequence (Metsantan Member), are evident on the Silver Pond property. These volcanics strike northeast and dip 5 to 20 degrees to the northwest. The two sequences are intruded by steeply dipping rhyolite to rhyodacite dikes and are generally associated with steeply dipping fault zones. These are overlain by pyroxene basalt. The volcanic sequence in stratigraphic order is composed of, (1) quartz andesite crystal tuff, (2) fine-grained to aphanitic chocolate brown tuff, (3) welded trachyte tuff, and (4) trachyte crystal and crystal lapilli tuff with interbedded volcanogenic greywacke. Several north-northwest striking faults have been identified and are slightly offset by younger east-striking faults. The north-northwest striking faults apparently were the conduits for the mineralizing fluids which gave rise to mineralization at the Silver Pond (North) (094E 069), Silver Creek (094E 075), Amethyst (094E 160), South (094E 161) and Ridge (094E 162) prospects. The Toodoggone volcanics are affected by widespread weak propylitic alteration and weak silicification.

The southern portion of the Silver Pond property is capped by younger Sustut Group conglomerates in slight angular unconformity with the underlying Toodoggone volcanics.

Alteration associated with structurally controlled epithermal mineralization, in the area, consists of pervasive silicification grading outward into weaker silicification, sericitization, and argillic and potassic alteration. An alteration zone, two kilometres across, covers much of the area and is marked by a gossan of abundant goethite, jarosite and hematite. Quartz, alunite, kaolinite, montmorillonite, dickite, illite, sericite, and minor amounts of barite, fluorite, limonite and pyrite comprise secondary minerals in intermediate to advanced argillic-altered zones (Forster, 1984).

Two general styles of acid-sulphate type epithermal gold-silver mineralization occur on the Silver Pond property. These consist of vein and breccia-type ore shoots and pods, such as the Silver Pond (West) prospect and the Silver Pond (Silver Creek) prospect (094E

CAPSULE GEOLOGY

075); and high-level stockwork-type mineralization such as the Silver Pond (North) prospect (094E 069). Gold and silver are generally absent from intensely altered regions in the area, with pyrite and magnetite being the only visible metallic minerals (Forster, 1984).

The Silver Pond (West) deposit constitutes part of a regional northwest to north-northwest striking fault zone, west of and parallel the Cliff Creek fault. Hostrocks for the mineralization are porphyritic andesite flows, agglomerates, and crystal and lapilli tuffs. Propylitic alteration is characterized by chlorite and pyrite replacement of the original mafic minerals and epidote and albite replacement of igneous plagioclase. Alteration associated with mineralization includes strong to pervasive silicification, sericitization, and potassic and argillic alteration.

The occurrence was discovered in 1984 when gold-bearing quartz float was noted on the east side of Cloud Creek. Followup geophysical and geochemical surveys defined a southeast-trending resistivity high and partly coincident gold soil anomaly. Precious metals were discovered by a trenching and drilling program in 1985.

The mineralized zone is hosted in a wide alteration zone. At least three 1 to 3-metre wide auriferous zones of intense silicification, brecciation and minor amounts of sulphide characterize mineralization within this alteration zone. All three auriferous zones are parallel, striking 120 degrees with a subvertical dip and separated by 10 to 30 metres. The most intense mineralization and alteration occur as an up to 40-metre wide stockwork zone in both the hangingwall and footwall of a vertical to steeply southeast or northeast dipping rhyolite dike. The dike is partially altered at its contacts and is in places cut by stockwork-type mineralization. Mineralization and alteration intensity of the rhyolite dike to the northwest and southeast decrease significantly.

Two types of mineralization are recorded: (1) narrow veins and stringers of multistage silica with minor calcite, epidote, chlorite, pyrite and laumontite, rare amethystine quartz with traces of galena, chalcopyrite, sphalerite, electrum, native silver and acanthite; and (2) zones of intensive to pervasive silicification which are usually associated with hydrothermal brecciation and intense multiphase veining.

The Silver Pond (West) developed prospect was the focus of an extensive drill program in 1987, consisting of 6011 metres in 55 holes. Diamond drilling intersected gold mineralization over a strike length of over 400 metres and a depth of 200 metres vertical. Significant intercepts range up to 12.3 grams per tonne gold and 324.4 grams per tonne silver over a true width of 2.12 metres (Assessment Report 16952). A total of 70 significant intercepts with over 1 gram per tonne gold and silver were recorded. The weighted average of these intercepts was 3.29 grams per tonne gold and 23.24 grams per tonne silver over 1 metre true width (Assessment Report 16952). Several reserve calculations have been made. Two gold reserve calculations are quoted here (Assessment Report 16952).

	TONNAGE	AVERAGE GRADE	TONNAGE	AVERAGE GRADE
ZONE A	27811.80	7.19	34806.60	6.23
ZONE B	7464.00	5.37	14683.30	4.07
ZONE C	12543.80	6.96	12611.30	6.94
TOTAL	47819.60		62101.20	
AVERAGE GRADE		6.85 g/t		5.86 g/t
AVERAGE TRUE WIDTH		1.40 metres		1.34 metres
CUTOFF GRADE	3.0 g/t and 3.6 GMP*		2.4 g/t and 2.88 GMP*	
* GM Product (gold equivalent (grams/tonne) x thickness (metres))				

The apparent lack of vertical and along-strike continuity accounts for the low tonnage.

An area of coincident resistivity and magnetic high, southeast of the Silver Pond (West) occurrence, was tested by backhoe trenching in 1987. Further precious metal mineralization was not uncovered.

In 2003, the property was held by Gmadsman Resources Inc.

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N MINER October 13, 1986; November 16, 1987
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1),#127(July 3), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983; Jan/Feb, 1984
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V STOCKWATCH June 18, September 4, November 6, 1987
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DATE CODED: 1992/03/26
DATE REVISED: 1992/03/26

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 164**

NATIONAL MINERAL INVENTORY: 094E14 Cu2

NAME(S): **TK 81**, TK, TK 1-88

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E14W 094E14E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 57 32 N
LONGITUDE: 127 15 07 W
ELEVATION: 1500 Metres

NORTHING: 6425471
EASTING: 603438

LOCATION ACCURACY: Within 500M

COMMENTS: The location of blebs and sheets of molybdenite (Assessment Report 1674). The showing is located 6.0 kilometres west of the Frog River and east of Lunar Creek, 18.75 kilometres north-northwest of the confluence of the Frog River with Geese Creek.

COMMODITIES: Molybdenum

MINERALS

SIGNIFICANT: Molybdenite
ASSOCIATED: Chlorite Sericite Biotite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated
CLASSIFICATION: Porphyry
DIMENSION: 23 x 9 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The best molybdenite showing is 23 metres long by 0.6 to 9.0 metres wide (Assessment Report 1674).

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Paleozoic	Unnamed/Unknown Group	Undefined Formation	
Permian	Asitka	Undefined Formation	
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Sericite Schist
Chlorite Schist
Biotite Schist
Quartzite
Granite
Granodiorite
Pegmatite
Felsite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Cassiar Mountains
RELATIONSHIP:
GRADE: Greenschist

CAPSULE GEOLOGY

The TK 81 showing, and several other minor occurrences, are located 6.0 kilometres west of Frog River and east of Lunar Creek, 18.75 kilometres north of the confluence of the Frog River with Geese Creek (Assessment Report 1674). Dease Lake is 135 kilometres to the northwest.

The TK 81 showing lies on the western edge of the Omineca Belt near the Kutcho fault, marking the boundary with rocks of the Intermontane Belt. The showing is underlain by an unnamed Upper Triassic to Lower Jurassic pluton. Minor roof pendants of metavolcanic and metasedimentary rocks occur near the TK 81 showing within this pluton. Early regional mapping correlated these rocks with the Permian Asitka Group based on lithological similarities (Geological Survey of Canada Open File 483). Fossil evidence from later regional mapping gives a Mississippian age for at least part of the sequence (Geological Survey of Canada Paper 80-1B, pages 207-211). A tentative age of Devonian to Permian is given to these metamorphic rocks.

Five stratigraphic units have been recognized, and are, from oldest to youngest, feldspathic chlorite schist; phyllite, sericite and calcareous sericite schist; massive rhyolite, chert and sericite schist; carbonate; and an upper feldspathic chlorite schist. The rocks are complexly folded and have undergone at least two phases of deformation. They are predominantly calcalkaline with minor alkaline members. The sequence is similar in many respects to rocks

CAPSULE GEOLOGY

of the Kutcho Formation in the southeastern corner of the Cry Lake map area (NTS 104I).

At the TK 81 showing, several molybdenum occurrences are found in metamorphic rocks composed of quartzite, and chlorite, sericite and biotite schists. Inclination of the metamorphic-intrusive contact decreases from vertical in the west near the TK 81 showing, to 30 degrees south in the east. Schistosity is parallel to the attitude of the contact. Evidence suggests that the metamorphic rocks were intruded by the granite to granodiorite pluton, which at the TK 81 showing are massive, poorly fractured, blocky and frequently host pegmatitic dikes. These dikes are up to 60 centimetres wide and composed of feldspar, quartz, biotite, muscovite and magnetite. Some pegmatites contain crystals up to 5 centimetres. Fractures in the granite and granodiorite have been infilled with finer grained compositional equivalents.

The TK 81 showing consists of several molybdenum showings, near the metamorphic-granite contact. Modes of occurrence are as; 1) blebs and sheets parallel to planes of schistosity, (2) as replacement of mafic minerals in granite, and (3) as blebs and scales in widely spaced fault zones. Sericite schist contains the bulk of the molybdenite.

The best showing covers an area 23 metres long by 0.6 to 9 metres wide. The best grade may run up to 1 per cent molybdenum (Assessment Report 1674). Granite contains sparse molybdenite blebs.

Several other smaller molybdenite occurrences are found within 800 metres of the showing above. Minor molybdenite was traced to two fault zones cutting across the granite and schists. One high grade zone, 3.6 metre high by several centimetre wide, is estimated to contain 2 per cent molybdenite (Assessment Report 1674).

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- GSC OF 306; 483
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- GSC MAP 14-1973

DATE CODED: 1992/12/17
DATE REVISED: 1992/12/17

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 165**

NATIONAL MINERAL INVENTORY:

NAME(S): **SCREE 3**, MOOSE-82 GROUP, MOOSE,
MOOSE 1-3, BULL MOOSE, WAS #1,
CALF MOOSE, HORN 2 FRACTION, SCREE,
SCREE 1-3, GAS, GAS 2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 28 43 N
LONGITUDE: 127 11 56 W
ELEVATION: 1640 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6372096
EASTING: 607998

COMMENTS: Mineralized vein/fault zone located approximately 18 kilometres
north-northwest of the Lawyers mine (094E 066), about 280 kilometres
north of Smithers (Assessment Report 13961).

COMMODITIES: Silver Gold Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Middle Jurassic
ISOTOPIC AGE: 168 +/- 6 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
COMMENTS: An isotopic age date on adularia from the Metsantan Lake showing (094E
035) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Feldspar Hornblende Crystal Tuff
Crystal Tuff
Crystal Lapilli Tuff
Basalt Andesite Dike
Tuff Breccia
Ash Tuff
Dacite Porphyry Flow
Dacite
Diorite
Diorite Porphyry

HOSTROCK COMMENTS: Toodoggone volcanic rocks are assigned to the Metsantan and McClair members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 1841.0000 Grams per tonne
Gold 7.0000 Grams per tonne
Lead 2.9000 Per cent
Zinc 3.9200 Per cent

COMMENTS: Sample R-20, one of seven grab samples taken from this showing.
REFERENCE: Assessment Report 13961.

CAPSULE GEOLOGY

The Scree 3 occurrence is located approximately 18 kilometres north-northwest of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at

CAPSULE GEOLOGY

the southern end of the Toodoggone gold camp. The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Scree 3 showing is underlain by intermediate porphyritic rocks of the Toodoggone Formation. These include feldspar hornblende crystal and crystal-lapilli tuffs, and tuff breccias, a thin ash-fall tuff and lesser dacite porphyry flows. Cutting this sequence is a small diorite plug, diorite porphyry, and commonly narrow and scattered basalt and andesite dikes. The volcanic sequence appears to dip moderately to the northeast. Observed faults have northwest and east-southeast to southeast strikes. The most important structural feature is a vertical shear and fracture zone that extends northwestward from McClair Creek to Moosehorn Creek.

Initial property exploration, in the area of the Scree 3 occurrence, was focused on lead and zinc sulphides in quartz veins about 1.15 kilometres to the west. Early geochemical surveys outlined an area about 1500 metres long with anomalous, silver, lead, zinc and copper in soils. Followup geochemistry, geophysics and geology revealed local mineralization, confirming previous geochemical anomalies.

Mineralization consists of a vein-fault system hosting sphalerite and galena mineralization over 5 to 15 centimetre widths, located within a broad gold soil anomaly. Assay values up to 7.0 grams per tonne gold, 1841.0 grams per tonne silver, 3.92 per cent zinc, 2.90 per cent lead and 0.020 per cent copper were obtained from grab samples (Assessment Report 13961).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/04/08
DATE REVISED: 1992/04/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 166**

NATIONAL MINERAL INVENTORY:

NAME(S): **SCREE 1**, MOOSE-82 GROUP, MOOSE,
MOOSE 1-3, BULL MOOSE, WAS #1,
CALF MOOSE, HORN 2 FRACTION, SCREE,
SCREE 1-3, GAS, GAS 2

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 29 19 N
LONGITUDE: 127 13 23 W
ELEVATION: 1530 Metres

NORTHING: 6373171
EASTING: 606520

LOCATION ACCURACY: Within 500M

COMMENTS: Location of mineralized 15-centimetre wide quartz vein, approximately
18 kilometres north-northwest of the Lawyers mine (094E 066) and 280
kilometres north of Smithers (Assessment Report 13961).

COMMODITIES: Gold Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Galena Sphalerite
ASSOCIATED: Quartz Epidote
MINERALIZATION AGE: Middle Jurassic
ISOTOPIC AGE: 168 +/- 6 Ma

DATING METHOD: Potassium/Argon MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
COMMENTS: An isotopic age date on adularia from the Metsantan Lake showing (094E
166) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 200 +/- 7 Ma		
	DATING METHOD: Potassium/Argon		
	MATERIAL DATED: Biotite		
Lower Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Feldspar Hornblende Crystal Tuff
Crystal Tuff
Crystal Lapilli Tuff
Basalt Andesite Dike
Tuff Breccia
Ash Tuff
Dacitic Porphyry Flow
Dacite
Diorite
Diorite Porphyry

HOSTROCK COMMENTS: Toodoggone volcanic rocks are assigned to the Metsantan and McClair members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Spatsizi Plateau

RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab
 COMMODITY

YEAR: 1985

COMMODITY	GRADE	
Silver	7.4000	Grams per tonne
Gold	0.8400	Grams per tonne
Copper	0.0980	Per cent
Lead	0.5000	Per cent
Zinc	0.5000	Per cent

COMMENTS: Sample 85-G-23, one of two samples taken from the vein. Lead and zinc values are greater than 0.50 per cent.

REFERENCE: Assessment Report 13961.

CAPSULE GEOLOGY

The Scree 1 showing is located approximately 18 kilometres north-northwest of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp. The occurrence is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Scree 1 showing is underlain by intermediate porphyritic rocks of the Toodoggone Formation. These include feldspar hornblende crystal and crystal-lapilli tuffs, and tuff breccias, a thin ash-fall tuff and lesser dacite porphyry flows. Cutting this sequence is a small diorite plug, diorite porphyry, and commonly narrow and scattered basalt and andesite dikes. The volcanic sequence appears to dip moderately to the northeast. Observed faults have northwest and east-southeast to southeast strikes. The most important structural feature is a vertical shear and fracture zone that extends northwestward from McClair Creek to Moosehorn Creek.

Initial property exploration, in the area of the Scree 1 showing, was focused on lead and zinc sulphides in quartz veins about 1.3 kilometres to the south-southeast. Early geochemical surveys outlined an area about 1500 metres long with anomalous, silver, lead, zinc and copper in soils. Followup geochemistry, geophysics and geology revealed local mineralization, confirming previous geochemical anomalies.

Mineralization consists of a 15-centimetre wide quartz vein hosting galena, sphalerite and epidote. Two grab samples were taken from this vein during an exploration program in 1985. Assay values from sample 85-G-23 were 7.4 grams per tonne silver and 0.840 gram per tonne gold, greater than 0.5 per cent zinc and lead, and 0.098 per cent copper (Assessment Report 13961). Sample 85-R-28 analysed 4.6 grams per tonne silver, 0.13 gram per tonne gold, 0.5 per cent zinc, 0.46 per cent lead and 0.102 per cent copper (Assessment Report 13961).

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 pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
 291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
 pp. 409-415; 1991, pp. 207-216
 EMPR BULL 86
 EMPR ASS RPT 3831, 3832, 3833, 3834, 4061, 4062, 4064, 4592, 4631,
 5072, 8058, 9269, 9832, 10291, 11238, *13961
 EMPR MAP 61 (1985)

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1024
REPORT: RGEN0100

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/04/08
DATE REVISED: 1992/04/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 167**

NATIONAL MINERAL INVENTORY:

NAME(S): **CALF MOOSE**, MOOSE-82 GROUP, MOOSE,
MOOSE 1-3, BULL MOOSE, WAS #1,
HORN 2 FRACTION, SCREE, SCREE 1-3,
GAS, GAS 2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6372099
EASTING: 605748

LATITUDE: 57 28 45 N
LONGITUDE: 127 14 11 W
ELEVATION: 1370 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of mineralized 1.3-metre wide quartz-carbonate vein intersected in drillhole MM-3, approximately 18 kilometres north-northwest of the Lawyers mine (094E 066), about 280 kilometres north of Smithers (Assessment Report 10291).

COMMODITIES: Gold Silver Zinc Lead

MINERALS

SIGNIFICANT: Galena
COMMENTS: Sphalerite is inferred from assay values and is present, along with chalcopyrite, in other veins in the area.

ASSOCIATED: Quartz Carbonate Pyrite

ALTERATION: Pyrite

ALTERATION TYPE: Pyrite

MINERALIZATION AGE: Middle Jurassic

ISOTOPIC AGE: 168 +/- 6 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Adularia

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 1 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: A quartz-carbonate vein, 1.3 metres wide, was intersected in drillhole MM-3 (Assessment Report 10291). The isotopic age date is from the Metsantan Lake showing (094E 035) (Bulletin 86).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 200 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

Lower Jurassic

Unnamed/Unknown Informal

LITHOLOGY: Feldspar Hornblende Crystal Tuff
Crystal Tuff
Crystal Lapilli Tuff
Basalt Andesite Dike
Tuff Breccia
Ash Tuff
Dacitic Porphyry Flow
Diorite
Dacite
Diorite Porphyry

HOSTROCK COMMENTS: Toodoggone volcanic rocks are assigned to the Metsantan and McClair members.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab

YEAR: 1982

COMMODITY	GRADE	
Silver	50.0000	Grams per tonne
Gold	1.2200	Grams per tonne
Lead	0.1900	Per cent
Zinc	0.2740	Per cent

COMMENTS: Sample (41110) of the vein, taken from drill core.
 REFERENCE: Assessment Report 10291.

CAPSULE GEOLOGY

The Calf Moose showing is located approximately 18 kilometres north-northwest of the Lawyers mine (094E 066), some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at the southern end of the Toadoggonne gold camp. The occurrence is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Calf Moose showing is underlain by intermediate porphyritic rocks of the Toadoggonne Formation. These include feldspar hornblende crystal and crystal-lapilli tuffs, and tuff breccias, a thin ash-fall tuff and lesser dacite porphyry flows. Cutting this sequence is a small diorite plug and diorite porphyry. Narrow and scattered basalt and andesite dikes are common to the east of the Calf Moose showing. The volcanic sequence appears to dip moderately to the northeast. Observed faults have northwest and east-southeast to southeast strikes. The most important structural feature is a vertical shear and fracture zone that extends northwestward from McClair Creek to Moosehorn Creek.

Initial property exploration, in the area of the Calf Moose showing, was focused on lead and zinc sulphides in quartz veins about 1.5 kilometres to the east. Early geochemical surveys outlined an area about 1500 metres long with anomalous, silver, lead, zinc and copper in soils. Followup geochemistry, geophysics and geology revealed local mineralization, confirming previous geochemical anomalies.

Mineralization consists of a 1.3-metre wide quartz-carbonate vein hosting galena mineralization occurring in crystal and crystal-lapilli tuffs. This vein was intersected in drillhole MM-3 at 39.3 metres. The drill program was conducted in 1974 to test several selected induced polarization conductors and subsequently re-examined, sampled and assayed in 1982. Vein-hosted mineralization in the area has a peripheral zone of disseminated base metal sulphides surrounded by weak to moderate pyritization (up to 15 per cent). Mineralization occurs as discrete grains or as discontinuous blebs. Sample 41110, from a drill core intersection of this vein, yielded 50.0 grams per tonne silver, 1.22 grams per tonne gold, 0.274 per cent zinc, 0.19 per cent lead and 0.0093 per cent copper (Assessment Report 10291).

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 1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
 1987-C328-C346; 1988-C185-C194
 EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
 pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
 291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
 pp. 409-415; 1991, pp. 207-216
 EMPR BULL 86

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1027
REPORT: RGEN0100

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/04/08
DATE REVISED: 1992/04/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 168**

NATIONAL MINERAL INVENTORY:

NAME(S): **JD-M1**, GASP, MVT,
GAS 1-2, JM, JD,
JU FRACTION, JK FRACTION, MOOSE 3,
HORN 2 FRACTION, WAS 1-2, WAS 1-32,
MAC GROUP, LAIR GROUP, PIT 41-60, 69-76,
M1

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 26 13 N
LONGITUDE: 127 09 10 W
ELEVATION: 1840 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6367533
EASTING: 610888

COMMENTS: The centre of Trench J83P-11 within the Gasp zone of the JD-M1 prospect. The prospect is located 4.5 kilometres north-northeast of Kadah Lake and 4.5 kilometres south of Oxide Peak in the southern Toodoggone gold camp, approximately 280 kilometres north of Smithers.

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Pyrite Galena Sphalerite Chalcopyrite Gold
Silver

COMMENTS: The Gasp zone is mineralized over 20 metres on surface.

ASSOCIATED: Quartz Calcite Barite
ALTERATION: Epidote Hematite Chlorite Actinolite Talc
Calcite Quartz Sericite

COMMENTS: Alteration is structurally controlled.

ALTERATION TYPE: Propylitic Argillic Hematite Silicific'n Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Disseminated
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 350 x 100 x 20 Metres STRIKE/DIP: 280/

COMMENTS: Veins occur within a northwest-trending, lens-shaped alteration zone 100 metres wide at its widest point and 350 metres long (Assessment Report 18015).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toodoggone

LITHOLOGY: Andesitic Flow
Andesitic Flow Breccia
Andesite
Latite Flow
Latite Flow Breccia
Latite
Heterolithic Lapilli Block Tuff
Diabase Dike
Rhyolite Dike
Lahar

HOSTROCK COMMENTS: The youngest date on the underlying Metsantan Member is 197 Ma and the oldest on the overlying Attycelley Member is 193.8 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located at the southern end of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel

YEAR: 1988

COMMODITY	GRADE	
Silver	6.4500	Grams per tonne
Gold	24.4900	Grams per tonne

COMMENTS: Sample taken from Trench J83P-11 over 5.0 metres.
REFERENCE: Assessment Report 18015.

CAPSULE GEOLOGY

The JD-M1 mineral prospect is located approximately 4.5 kilometres north-northeast of Kadah Lake and 4.5 kilometres south of Oxide Peak, some 280 kilometres north of Smithers. The prospect consists of two individual zones; the Gasp and the MVT. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp.

The JD-M1 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusives bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The JD-M1 prospect is underlain by a thick succession of Lower Jurassic volcanics of the Toodoggone Formation. The sequence has been subdivided into two members which are separated by a low angle thrust (?) fault. The upper McClair Member consists of heterogeneous, lapilli to block tuff, andesitic flows and numerous co-genetic dikes and subvolcanic plugs; minor mudstone and conglomerate (Bulletin 86). The underlying Metsantan Member consists of latite flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). Both members are dominated by flows and flow breccias around the JD-M1 prospect (Assessment report 18015). This sequence is cut by a series of steeply dipping diabasic and rhyolitic dikes.

Alteration on the JD-M1 prospect is structurally controlled and ranges from weak propylitic to intense silicic, argillic and sericitic. Propylitic alteration is the most widespread and important alteration type of the prospect, either hosting mineralized veins or forming haloes around more intensely altered and mineralized systems. Propylitic alteration consists of replacement of plagioclase phenocrysts by epidote or hematite and mafic phenocrysts by chlorite, epidote, actinolite, talc and disseminated calcite (Assessment Report 18015).

The Gasp zone is characterized by quartz-calcite +/- barite veins and breccia with some native gold over a 20 metre width. Host rocks consists of propylitically altered andesites of the McClair Creek formation of the Toodoggone volcanics. Individual veins are less than 1 millimetre to 20 centimetres wide. Quartz-calcite +/- barite-pyrite-galena-sphalerite-chalcocopyrite comprise these veins. Angular propylitic altered andesite wallrock occur within wider veins. The veins occur in a northwest-trending lens-shaped zone, up to 100 metres wide and 350 metres long. Individual veins strike 280 to 295 degrees over strike lengths of up to 10 metres. These veins are thought to occupy sigmoidal tension gashes produced by a northwest oriented shear couple. Diabase dikes, 0.1 to 1.5 metres wide, are associated with, but not confined to, the Gasp prospect. These dikes intrude both hematite and propylitic altered andesites and mineralization and may have provided a heat source for the concentration of mineralization in veins.

The best trench intersection (Trench J83P-11) was 24.49 grams per tonne gold and 6.45 grams per tonne silver over 5.0 metres (Assessment Report 18015). Followup trenching in 1988, east of the main part of the Gasp prospect, intersected significant pyrite, galena, sphalerite and chalcocopyrite mineralization in silicified andesite. Assay results from channel samples were 5.3 grams per

CAPSULE GEOLOGY

tonne gold and 3.8 grams per tonne silver over 6.0 metres (Assessment Report 18015). A 1-metre section analysed 23.0 grams per tonne gold and 16.5 grams per tonne silver (Assessment Report 18015). Gold mineralization at the Gasp prospect occurs over narrow intervals with the exception of trench J83P-11, and show a lack of continuity along strike and depth.

The MVT zone is located approximately 100 metres southwest of the Gasp zone. It consists of a southeast-striking, moderately southwest-dipping base metal replacement and stringer-type zone. It is defined along a northwest-trending fault, localized along a volcanoclastic-andesite flow contact within the McClair Member of the Toodoggone Formation. The zone appears to narrow to the northwest and to the southeast.

Alteration is 2 to 8 metres wide extending to over 400 metres strike length and intermittently offset by north-trending cross faults. Intense calcite-quartz replacement with later open space quartz veining comprises alteration of this zone.

Mineralization within the MVT zone includes 1 to 10 per cent finely disseminated pyrite and variable amounts of plagioclase phenocrysts replacement by base metal mineralization including 1 to 3 per cent sphalerite and galena (Assessment Report 18015). The best intersection within this zone is 7.55 grams per tonne gold over two metres (Sample JD88-39) which is associated with the brecciated silicified hangingwall rock of the fault (Assessment Report 18015). Gold mineralization appears to be erratically distributed.

AFC Americas Gold Corporation and Antares Mining and Exploration Corp. drilled 3 holes on the MVT zone in 1997. AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

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*13272, *18015, 23663
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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1990, pp. 207-216
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
ECON GEOL Vol. 86, pp. 529-554, 1991
GCNL #123(June26),#141,#163(Aug.23),#243(Dec.15), 1984; #23(Feb.1),
1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
MIN REV September/October, 1982; July/August, 1986
N MINER Sept.23,30, Oct.28, 1982; Dec.15, 1983; Aug.2,16,23, 1984;
June 16, Oct.13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW <http://www.agcgold.com>

DATE CODED: 1992/09/15
DATE REVISED: 1992/09/15

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 169**

NATIONAL MINERAL INVENTORY:

NAME(S): **JD-EOS**, GSA 1-2, JM,
JD, JU FRACTION, JK FRACTION,
MOOSE 3, HORN 2 FRACTION, WAS 1-2,
WAS 1-32, PIT 69-76, MAC GROUP,
LAIR GROUP, PIT 41-60, EOS

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 26 40 N
LONGITUDE: 127 09 05 W
ELEVATION: 1790 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of grab sample AA-26818 taken from quartz-calcite vein. The prospect is located 5.25 kilometres north-northeast of Kadah lake and 3.75 kilometres south of Oxide Peak in the southern Toodoggone gold camp, approximately 280 kilometres north of Smithers. The JD-M1 prospect (094E 168) is 900 metres to the south.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6368370
EASTING: 610949

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena Chalcopyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Epidote Chlorite Actinolite Hematite Talc
Calcite Quartz Sericite

COMMENTS: Alteration is structurally controlled.
ALTERATION TYPE: Propylitic Argillic Sericitic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Stockwork
CLASSIFICATION: Epithermal Epigenetic
SHAPE: Tabular
DIMENSION: 300 x 30 Metres STRIKE/DIP: 333/ TREND/PLUNGE:
COMMENTS: The JD-EOS prospect is 20 to 30 metres wide and has a minimum strike length of 300 metres along 333 degrees (Assessment Report 18015).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 197 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Hornblende Plagioclase Andesite
Rhyolite Dike
Latite Flow
Latite Flow Breccia
Latite
Lapilli Tuff
Lahar
Heterolithic Lapilli Block Tuff
Andesitic Flow
Andesitic Flow Breccia

HOSTROCK COMMENTS: Two separate potassium-argon ages on biotite from the Metsantan member of the Toodoggone Formation are 200 and 197 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
COMMENTS: Located in the south-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab

YEAR: 1983

COMMODITY	GRADE	
Silver	47.4000	Grams per tonne
Gold	17.7000	Grams per tonne

COMMENTS: Assay results are from grab sample 67818.
 REFERENCE: Assessment Report 11843.

CAPSULE GEOLOGY

The JD-EOS mineral prospect is located approximately 5.25 kilometres north-northeast of the Kadah Lake and 3.75 kilometres south of Oxide Peak, some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp.

The JD-EOS prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The JD-EOS prospect is underlain by a thick succession of Lower Jurassic volcanics assigned to the Metsantan Member of the Toodoggone Formation. The Metsantan Member consists of latite flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). Immediately to the west a low angle thrust (?) fault separates volcanics of the Metsantan Member from the overlying McClair Member. The McClair Member consists of heterogeneous, lapilli to block tuff, andesitic flows and numerous cogenetic dikes and subvolcanic plugs; minor mudstone and conglomerate (Bulletin 86). Both members are dominated by flows and flow breccias around the JD-EOS prospect (Assessment report 18015). This sequence is cut by a series of steeply dipping diabasic and rhyolitic dikes.

Alteration on the JD-EOS prospect is structurally controlled and ranges from weak propylitic to intense silicic, argillic and sericitic. Propylitic alteration is the most widespread and important alteration type of the prospect, either hosting mineralized veins or forming haloes around more intensely altered and mineralized systems. Propylitic alteration consists of replacement of plagioclase phenocrysts by epidote or hematite and mafic phenocrysts by chlorite, epidote, actinolite, talc and disseminated calcite (Assessment Report 18015).

The JD-EOS prospect consists of a northwest-trending, steeply dipping zone of quartz-calcite veins which are hosted in propylitic altered hornblende-plagioclase andesite. Individual veins are 0.5 to 8 centimetres thick and occur in a 20 to 30-metres wide zone with a density of 2 to 10 veins per metre (Assessment Report 11843). The overall strike length of the JD-EOS prospect extends to over 300 metres consisting of intermittent quartz-calcite stringer zones

The mineralogy of the veins is sphalerite, galena and chalcopryrite in a gangue of quartz, calcite, and pyrite (Assessment Report 11843). The mineralization is best developed adjacent to two rhyolite dikes. Overall, mineralization is erratically developed in narrow veins, separated by barren propylitic altered andesite

Grab sample 67818, taken in 1983 from this zone, analysed 17.7 grams per tonne gold and 47.4 grams per tonne silver (Assessment Report 11843). Another grab sample of vein material is reported to have analysed 179 grams per tonne gold and 470 grams per tonne silver (Assessment Report 18015). Other grab samples analysed as high as 12 per cent combined lead and zinc and 6.60 grams per tonne gold and 59.0 grams per tonne silver (Assessment Report 18015).

AGC Americas Gold Corporation and Antares Mining and Exploration Corp. drilled 6 holes in the EOS zone. AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital

CAPSULE GEOLOGY

Corporation in September 1999.

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IPDM Nov/Dec 1983
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N MINER Sept.23,30, Oct.28, 1982; Dec.15, 1983; Aug.2,16,23, 1984;
June 16, Oct.13, 1986
N MINER MAG March 1988, p. 1
W MINER April, 1982
WIN Vol. 1, #7, June 1987
WWW <http://www.infomine.com/>

DATE CODED: 1992/09/16
DATE REVISED: 1996/12/03

CODED BY: KJM
REVISED BY: GSB

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 170**

NATIONAL MINERAL INVENTORY:

NAME(S): **JD-M3**, WOOF, AG CARBONATE,
SCHMITT, GAS 1-2, JM,
JU FRACTION, JK FRACTION, MOOSE 3,
HORN 2 FRACTION, VENT, WAS 1-32,
PTI 69-76, MAC GROUP, LAIR GROUP,
PIT 41-60

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6368031
EASTING: 609840

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:
LATITUDE: 57 26 30 N
LONGITUDE: 127 10 12 W
ELEVATION: 1860 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: The location is for grab sample 26070 from the Woof zone of the JD-M3 prospect, located 4,5 kilometres north of Kadah Lake and 4.5 kilometres south-southwest of Oxide Peak. The prospect is located in the south-central portion of the Toodoggone gold camp, approximately 280 kilometres north of Smithers.

COMMODITIES: Gold Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Acanthite Sphalerite Galena Gold Pyrite
Chalcopyrite
COMMENTS: Mineralogy varies from zone to zone. Refer to Assessment Report 18015 and capsule geology for a more detailed description.

ASSOCIATED: Quartz Carbonate
ALTERATION: Hematite Clay Epidote Chlorite Actinolite
Talc Calcite Sericite

COMMENTS: Age dates from alteration at the nearby Metsantan and Al epithermal-type prospects indicate a Early Jurassic age (Bulletin 86).
Alteration is structurally controlled.

ALTERATION TYPE: Hematite Argillic Propylitic Silicific'n Sericitic
MINERALIZATION AGE: Lower Jurassic

DEPOSIT

CHARACTER: Breccia Vein Disseminated
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 150 x 2 Metres STRIKE/DIP: 325/
COMMENTS: The Woof zone of the JD-M3 prospect is up to 2 metres wide and two exposures comprising this zone are 150 metres apart. Veins within the Woof zone strike 325 and dip steeply (Assessment Report 18015).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Andesite Flow
Andesitic Flow Breccia
Andesite
Latite Flow
Latite Flow Breccia
Latite
Heterolithic Lapilli Block Tuff
Diabase Dike
Rhyolite Dike
Sub Volcanic

HOSTROCK COMMENTS: The youngest age date on the Metsantan member is 197 Ma and the oldest on the overlying Attycelley member is 193.8 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the south-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1983

COMMODITY	GRADE	
Silver	30.5000	Grams per tonne
Gold	79.2000	Grams per tonne

COMMENTS: Grab sample 26070, taken from the southern exposure on the Woof zone.
REFERENCE: Assessment Report 11843.

CAPSULE GEOLOGY

The JD-M3 mineral prospect is located approximately 5.25 kilometres north-northeast of the Kadah Lake and 3.75 kilometres south of Oxide Peak, some 280 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains at the southern end of the Toodoggone gold camp.

The JD-M3 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The JD-M3 prospect is underlain by a thick succession of Lower Jurassic volcanics assigned to the McClair and Metsantan members of the Toodoggone Formation, separated by a low angle thrust (?) fault. The Metsantan Member consists of latite flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The McClair Member consists of heterogeneous, lapilli to block tuff, andesitic flows and numerous cogenetic dikes and subvolcanic plugs; minor mudstone and conglomerate (Bulletin 86). Both members are dominated by flows and flow breccias around the JD-M3 prospect (Assessment Report 18015). This sequence is cut by a series of steeply dipping diabasic and rhyolitic dikes.

Alteration on the JD-M3 prospect is structurally controlled and ranges from weak propylitic to intense silicic, argillic and sericitic. Propylitic alteration is the most widespread and important alteration type of the prospect, either hosting mineralized veins or forming haloes around more intensely altered and mineralized systems. Propylitic alteration consists of replacement of plagioclase phenocrysts by epidote or hematite and mafic phenocrysts by chlorite, epidote, actinolite, talc and disseminated calcite (Assessment Report 18015).

The JD-M3 mineral prospect consists of three separate zones; the Woof, the Ag-Carbonate and the Schmitt. These zones are characterized by breccia zones and related mineralization adjacent to northwest and north-northeast trending cross faults, at or near their intersections with a low angle thrust (?) fault.

The Woof zone consists of two distinct brecciated vein systems and outcrops, approximately 150 metres apart. The southern zone consists of a 1 to 2-metre wide breccia zone of hematitic and argillic altered, and brecciated andesite cemented by milky white quartz with visible gold (Assessment Report 11843).

Grab sample 26070, taken in 1983, analysed 79.2 grams per tonne gold and 30.5 grams per tonne silver (Assessment Report 11843). In 1988, grab samples analysed 34.0 grams per tonne gold and 23.09 grams per tonne silver (Assessment Report 18015).

The north zone consists of a 1-metre wide calcite, sphalerite, acanthite (?) vein yielding up to 5.3 grams per tonne gold and 3650 grams per tonne silver (Assessment Report 18015). Both vein systems strike northwest and have subvertical dips.

The Ag-carbonate zone is interpreted to be a multiphase carbonate-sphalerite-acanthite vein system associated with a north-trending fault system in the McClair Member of the Toodoggone Formation. Mineralization appears to consist of a lens of carbonate breccia with acanthite and sulphides. The approximate surface dimensions of the breccia lens are 2 by 3 metres.

CAPSULE GEOLOGY

A grab sample from this zone analysed 37.05 grams per tonne gold and 1049.2 grams per tonne silver (Assessment Report 18015). In 1988, channel samples yielded 4.07 grams per tonne gold and 212.0 grams per tonne silver over 2.5 metres (Assessment Report 18015); and 4.03 grams per tonne gold and 198.2 silver grams per tonne over 8.0 metres (Assessment Report 18015).

The Schmitt zone consists of a float boulder train of very high grade gold and silver-bearing sulphide breccia. Exploration in 1981 consisted of surface trenching on the Schmitt zone. A total of 7 trenches were dug in an attempt to uncover the source of the high-grade float. Only one of the seven trenches intersected in-situ vein material. Trenching on this vein uncovered 6 metres of vein length including the footwall and hangingwall rocks. The vein strikes east and schistosity of the hangingwall fault gouge suggests a steep northward dip. The vein is a complex breccia with two carbonate phases hosting acanthite, galena, pyrite and trace sphalerite and chalcopyrite. The earlier carbonate phase hosts up to 60 per cent of the mineralization.

Three sets of channel samples were taken from trench 7 and analysed as follows: Set 1 yielded 4.46 grams per tonne gold and 218.0 grams per tonne silver over 1.07 metres; Set 2 yielded 12.00 grams per tonne gold and 717.61 grams per tonne silver over 1.53 metres; and Set 3 yielded 4.07 grams per tonne gold and 212.03 grams per tonne silver (Assessment Report 10739). The highest gold and silver assays were from Set 2, with sample 70985 yielding 12.34 grams per tonne gold and 870.86 grams per tonne silver (Assessment Report 10739).

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N MINER Sept.23,30, Oct.28, 1982; Dec.15, 1983; Aug.2,16,23, 1984;
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/09/16
DATE REVISED: 1997/02/26

CODED BY: KJM
REVISED BY: GSB

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 171**

NATIONAL MINERAL INVENTORY:

NAME(S): **JD, JD-FINN, FINN,
GAS 1-2, JM, JU FRACTION,
JK FRACTION, MOOSE 3, HORN 2 FRACTION,
WAS 1-32, MAC GROUP, LAIR GROUP,
PIT 41-60; 69-76, SCHMITT, CENTRAL FINN**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 26 15 N
LONGITUDE: 127 08 39 W
ELEVATION: 1720 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for sulphide-bearing quartz, calcite veins exposed in Trench JD88-73 on the JD-Finn prospect, located 4.5 kilometres south of Oxide Peak and 4.5 kilometres north-northeast of Kadah Lake. The prospect is located in the south-central portion of the Toodoggone gold camp, approximately 280 kilometres north of Smithers.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6367609
EASTING: 611403

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Pyrite Chalcopyrite Gold

COMMENTS: Chalcopyrite is minor.

ASSOCIATED: Quartz Calcite

ALTERATION: Silica Quartz Pyrite Sericite Hematite

Magnetite Clay

COMMENTS: Age dates from alteration at the nearby Metsantan and Al epithermal-type prospects indicate an Early Jurassic age (Bulletin 86).

Alteration is structurally controlled.

ALTERATION TYPE: Silicific'n Sericitic Argillic Propylitic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated

CLASSIFICATION: Epithermal Epigenetic

TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 500 x 500 x 2 Metres STRIKE/DIP:

COMMENTS: Low to medium grade gold and silver intersections over 2 to 10 metre widths cover a mineralized area of approximately 500 square metres (Assessment Report 18015).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER

Lower Jurassic Hazelton Toodoggone

ISOTOPIC AGE: 197 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

LITHOLOGY: Latite Flow
Latite
Homblende Plagioclase Andesite
Lapilli Tuff
Lahar
Volcanic Sandstone
Conglomerate
Heterolithic Lapilli Block Tuff
Andesitic Flow

HOSTROCK COMMENTS: Two separate potassium-argon age dates on biotite for the Metsantan member of the Toodoggone Formation are 200 and 197 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Greenschist
Zeolite

COMMENTS: Located in the south-central portion of the Toodoggone gold camp.

INVENTORY

CAPSULE GEOLOGY

Sample 26008, taken in 1983, analysed 18.55 grams per tonne gold and 1348.0 grams per tonne silver. Another sample (25974) analysed 5.25 grams per tonne gold and 1790.0 grams per tonne silver (Assessment Report 11843). Trenching in 1988 uncovered several low to medium grade gold and silver mineralized intersections over 2 to 10 metres widths, in a mineralized area covering 500 square metres. One of the better intersections was from trench JD88-73 from which samples of sulphide-bearing quartz-calcite veins yielded 6.65 grams per tonne gold and 9.5 grams per tonne silver over 1.0 metre (Assessment Report 18015).

Sumac Mines Ltd. staked the property in 1971 and carried out soil sampling, magnetometer, geological mapping, some trenching and one diamond drill. Energex Minerals Ltd. optioned the claims in 1979 and sub-optioned the claims to Texasgulf which continued exploration including 15 drillholes. Energex worked the property in 1988 by 78 backhoe trenches, soil and rock sampling. In October 1994, AGC Americas Gold Corp. acquired the original JD claims from Energex and conducted geological mapping; induced polarization, soil and rock geochemical surveys; and 30 diamond drill holes.

Drilling to 1995 indicates a possible resource on the Finn zone of 147,889 tonnes grading 4.40 grams per tonne gold (George Cross News Letter, No.9 (January 13), 1995).

Work done in 1995 by AGC Americas Gold Corp., with support from the Explore B.C. Program, included geological mapping, collection of 2000 soil and 4000 rock samples, 40 kilometres of grid, 4000 metres of trenching and 8484.8 metres of diamond drilling in 103 holes, mostly (99 holes) concentrated on the Finn zone. This work indicated a gold-silver epithermal zone of sufficient size to warrant further work in 1996. Four holes drilled on the Schmitt and Woof zones yielded inconclusive results. Trenching and soil work were disappointing and inconclusive mostly due to extremely wet weather. Six new claims were staked along the property's east boundary (Explore B.C. Program 95/96 - M21).

In 1996, AGC completed 59 holes for 6100 metres on the Finn and Gumbo zones. The Gumbo zone appears to be the up-dip, western extension of the Finn zone. The company now believes they are targeting a structurally controlled 600 X 400 metre, east-west trending zone with a central (epithermal-style) brecciated and silicified gold zone, enveloped by a large stockwork zone of quartz carbonate veining with polymetallic disseminated and massive sulphides.

Americas Gold Corp. drilled 27 holes on the Finn zone in 1997. AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

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pp. 409-415; 1990, pp. 207-216
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Energex Minerals Ltd.; Toodoggone Project New Release, (27 July,
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32

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PR REL AGC Americas Gold Corp., Sept. 10, 1996
W MINER April, 1982
WWW <http://www.agcgold.com>
WIN Vol. 1, #7, June 1987

DATE CODED: 1992/09/17
DATE REVISED: 1997/04/30

CODED BY: KJM
REVISED BY: GSB

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094E 172**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOANNA GOLD**, JOANNA, JOANNA 1-4,
JOANNA 4, GULCH, GORDONIA

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 27 10 N
LONGITUDE: 127 03 52 W
ELEVATION: 1730 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Sample DMH-003, taken from a quartz vein located 2.0 kilometres south-southeast of Mount Gordonia, on the southwest face of a west-trending ridge. The prospect is located 290 kilometres north of Smithers in the north-central portion of the Toodoggone gold camp.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6369443
EASTING: 616140

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Malachite
COMMENTS: Pyrite is the only sulphide mineral reported.

ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Carbonate Pyrite Magnetite

ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 250 Metres STRIKE/DIP:
COMMENTS: The mineralized quartz vein is 20 centimetres wide by 250 metres long (Assessment Report 20671).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	Unnamed/Unknown Informal
Jurassic			

LITHOLOGY: Porphyritic Andesite Flow
Andesite
Pyroclastic
Andesite Breccia
Basalt
Basalt Flow
Basalt Breccia
Limestone
Argillite
Quartz Monzonite

HOSTROCK COMMENTS: Intrusive outcrop is most probably Early to Middle Jurassic, related to a stock to the south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1990

SAMPLE TYPE: Grab

COMMODITY

GRADE

COMMODITY	GRADE	Units
Silver	6.5000	Grams per tonne
Gold	4.2350	Grams per tonne
Copper	0.3661	Per cent

COMMENTS: Sample DMH-003. A chip sample taken in 1988 yielded high copper values.

REFERENCE: Assessment Report 20671.

CAPSULE GEOLOGY

The Joanna Gold prospect is located 2.0 kilometres south-southeast of Mount Gordonia on the southwest face of a west-trending ridge. The prospect is 290 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Joanna Gold prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The oldest rocks observed at the prospect are light to dark green porphyritic or massive andesitic flows and pyroclastics of the Takla Group (Assessment Report 20671). These have been summarized as basaltic and andesitic flows and breccia, with minor limestone and argillite (Bulletin 86). One small quartz monzonite outcrop, of probable Early to Middle Jurassic age, is located just to the north of the Joanna Gold prospect. Toodoggone volcanics are exposed on the southwest and west ridges of Mount Gordonia, immediately to the north.

Propylitic alteration is widespread throughout the area surrounding the Joanna Gold prospect, predominantly affecting andesitic flows and tuffs. These zones are characterized by chlorite alteration of plagioclase, biotite and hornblende phenocrysts, accompanied by a strong increase in epidote and/or carbonate, pyrite and magnetite in the groundmass (Assessment Report 20671).

A 20-centimetre wide by 250-metre long quartz vein, hosting fine pyrite and malachite staining comprises the Joanna Gold prospect.

Several samples have been taken from the Joanna Gold prospect, assaying anomalous precious and base metals. Sample 18440, a 100-centimetre chip sample taken in 1988, analysed 4.31 grams per tonne gold, 2.9 grams per tonne silver and 0.5709 per cent copper (Assessment Report 20671). In 1990, sample DMH-003 analysed 4.235 grams per tonne gold, 6.5 grams per tonne silver and 0.3661 per cent copper (Assessment Report 20671).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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EMPR ASS RPT 2506, 14765, 15067, 15338, *15818, 17267, *18536, 18763
*20671
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GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER March 3,10, Aug.18, Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; Feb.26,#148(Aug.11),#165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986

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MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1043
REPORT: RGEN0100

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DATE CODED: 1992/09/22
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 173**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOANNA JD, JOANNA, JOANNA 1-4,
JOANNA 4, GULCH, GORDONIA**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 27 35 N
LONGITUDE: 127 03 05 W
ELEVATION: 1720 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6370238
EASTING: 616901

COMMENTS: Anomalous samples JD-032 and 033, taken from a quartz vein located 1.6 kilometres south-southeast of Gordonia Peak at the headwaters of a west-flowing tributary of Belle Creek. The prospect is 290 kilometres north of Smithers in the north-central portion of the Toodoggone gold camp.

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Malachite
COMMENTS: Pyrite is the only sulphide mineral reported.
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Carbonate Pyrite Magnetite

ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 20 x 6 Metres STRIKE/DIP:
COMMENTS: A mineralized quartz vein is hosted within a gossan-fault zone 15 to 20 metres across and 1 to 6 metres thick (Assessment Report 20671).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	

LITHOLOGY: Porphyritic Andesite Flow
Andesite
Pyroclastic
Andesite Breccia
Basalt Flow
Basalt Breccia
Basalt
Limestone
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the north-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1990
SAMPLE TYPE: Chip	
COMMODITY	GRADE
Silver	2.9000 Grams per tonne
Gold	7.2200 Grams per tonne
Copper	0.1501 Per cent

COMMENTS: Sample JD-032, a 50-centimetre chip sample including 15 centimetres of quartz vein. Sample JD-033, a 1-metre chip sample was also anomalous.
REFERENCE: Assessment Report 20671.

CAPSULE GEOLOGY

The Joanna JD mineral prospect is located 1.6 kilometres south-southeast of Mount Gordonia at the headwaters of a west-flowing

CAPSULE GEOLOGY

tributary of Bell Creek. The prospect is 290 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Joanna JD prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The oldest rocks observed at the Joanna JD prospect are light to dark green porphyritic or massive andesitic flows and pyroclastics of the Takla Group (Assessment Report 20671). These have been summarized as basaltic and andesitic flows and breccia, with minor limestone and argillite (Bulletin 86). Toodoggone volcanics are exposed on the southwest and west ridges of Mount Gordon, immediately to the north and west.

Propylitic alteration is widespread throughout the area surrounding the Joanna JD prospect, predominantly affecting andesitic flows and tuffs. These zones are characterized by chlorite alteration of plagioclase, biotite and hornblende phenocrysts, accompanied by a strong increase in epidote and/or carbonate, pyrite and magnetite in the groundmass (Assessment Report 20671).

The Joanna JD prospect consists of a northwest-trending fault enveloped by a zone of intensely propylitically altered andesitic volcanics and hosting a mineralized quartz vein. The zone forms a bright orange-yellow gossan varying in thickness from 1 to 6 metres and has a surface exposure of 15 to 20 metres, appearing to pinch-out at higher elevations. No sulphides other than pyrite were observed.

Several samples were taken from this zone in 1990 with the following assay results. Sample JD-032, a 50-centimetre chip sample including 15 centimetres of quartz vein, analysed 7.22 grams per tonne gold, 2.9 grams per tonne silver and 0.1501 per cent copper (Assessment Report 20671). Sample JD-033, a chip sample over 1.0 metre, analysed 1.49 grams per tonne gold, 1.6 grams per tonne silver and 0.2431 per cent copper (Assessment Report 20671).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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W MINER April, 1982
N MINER March 3,10, Aug.18, Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; Feb.26,#148(Aug.11),#165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986

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PAGE: 1046
REPORT: RGEN0100

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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/09/22
DATE REVISED: 1992/09/22

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 174**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOANNA EAST**, JOANNA, JOANNA 1-4,
GULCH, GORDONIA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 27 55 N
LONGITUDE: 127 04 16 W
ELEVATION: 2020 Metres

NORTHING: 6370823
EASTING: 615700

LOCATION ACCURACY: Within 500M

COMMENTS: Location of Sample JD-047 taken along the southwest ridge of Mount
Gordonia, 550 metres southwest of the summit. Located in the north-
central portion of the Toodoggone gold camp, approximately 290
kilometres north of Smithers (Assessment Report 20671).

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite

ASSOCIATED: Quartz

ALTERATION: Chlorite Epidote Carbonate Pyrite Magnetite

ALTERATION TYPE: Propylitic

Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Undefined Formation	

LITHOLOGY: Agglomerate
Tuff
Rhyolite
Lithic Tuff
Crystal Tuff
Porphyritic Andesite Flow
Andesite
Pyroclastic
Limestone
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1990

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

7.2000

Grams per tonne

Gold

3.7700

Grams per tonne

Copper

1.6400

Per cent

COMMENTS: Sample JD-047, a grab sample of frost heave vein material.

REFERENCE: Assessment Report 20671.

CAPSULE GEOLOGY

The Joanna East mineral showing is located along the southwest ridge of Mount Gordonia, 550 metres from the summit. The showing is 290 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane

CAPSULE GEOLOGY

Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Toodoggone volcanics, observed at the Joanna East showing, are described as purple agglomerates, grey to purple tuffs, rhyolites and orange lithic to crystal tuffs (Assessment Report 20671). The oldest rocks are light to dark green porphyritic or massive andesitic flows and pyroclastics of the Takla Group (Assessment Report 20671). These have been summarized as basaltic and andesitic flows and breccia, with minor limestone and argillite (Bulletin 86).

Propylitic alteration is widespread throughout the area surrounding the Joanna East showing, predominantly affecting andesitic flows and tuffs. These zones are characterized by chlorite alteration of plagioclase, biotite and hornblende phenocrysts, accompanied by a strong increase in epidote and/or carbonate, pyrite and magnetite in the groundmass (Assessment Report 20671).

The southwest ridge of Mount Gordonia is crossed by numerous north and northwest-trending, steeply dipping faults, with which numerous quartz veins and zones of silicification are associated. The veins are commonly mineralized with gold, silver and copper. One of these veins comprises the Joanna East showing. The quartz vein is rusty weathering and exhibits minor propylitic alteration. Sulphides comprise up to 7 per cent, consisting of chalcopyrite and lesser pyrite; oxides comprise 2 per cent consisting of limonite and malachite (Assessment Report 20671).

Two samples taken from this showing in 1990 yielded elevated assay results. Grab sample JD-046 analysed 0.11 gram per tonne gold, 1.3 grams per tonne silver and 1.61 per cent copper (Assessment Report 20671). Grab sample JD-047, a frost-heave sample, presumably from the same vein as sample JD-046, analysed 3.77 grams per tonne gold, 7.2 grams per tonne silver and 1.64 per cent copper (Assessment Report 20671).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
pp. 409-415; 1991, pp. 207-216
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*20671
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER March 3,10, Aug.18, Oct.13, 1986
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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Mineralization, Toodoggone River Area, North-Central British

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1049
REPORT: RGEN0100

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DATE CODED: 1992/09/23
DATE REVISED: 1992/09/23

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 175**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOANNA WEST**, JOANNA, JOANNA 1-4,
GULCH, GORDONIA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 27 47 N
LONGITUDE: 127 04 54 W
ELEVATION: 1820 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6370557
EASTING: 615074

LOCATION ACCURACY: Within 500M

COMMENTS: Location of Sample JD-012, taken along the southwest ridge of Mount
Gordonia, 1.2 kilometres southwest of the summit. Located in the
north-central portion of the Toodoggone gold camp, approximately 290
kilometres north of Smithers (Assessment Report 20671).

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite

ASSOCIATED: Quartz

ALTERATION: Chlorite Epidote Carbonate Pyrite Magnetite

Goethite Limonite

ALTERATION TYPE: Propylitic Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated

CLASSIFICATION: Hydrothermal Epigenetic

COMMENTS: The quartz vein hosting mineralization is 40 centimetres wide
(Assessment Report 20671).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Jurassic
Upper Triassic

GROUP

Hazelton
Takla

FORMATION

Toodoggone
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Agglomerate
Tuff
Rhyolite
Lithic Tuff
Crystal Tuff
Porphyritic Andesite Flow
Andesite
Basalt
Limestone
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1990

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	15.3000	Grams per tonne
Gold	5.6500	Grams per tonne
Copper	0.6100	Per cent

COMMENTS: Sample JD-012, taken from a mineralized quartz vein up to 40
centimetres wide.

REFERENCE: Assessment Report 20671.

CAPSULE GEOLOGY

The Joanna West mineral showing is located along the southwest
ridge of Mount Gordonia, 1.2 kilometres from the summit. The showing
is 290 kilometres north of Smithers. It lies within the Omineca-
Cassiar mountains in the north-central portion of the Toodoggone gold

CAPSULE GEOLOGY

camp.

The Joanna West showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Toadoggone volcanics, observed at the Joanna West showing, are described as purple agglomerates, grey to purple tuffs, rhyolites and orange lithic to crystal tuffs (Assessment Report 20671). The oldest rocks are light to dark green porphyritic or massive andesitic flows and pyroclastics of the Takla Group (Assessment Report 20671). These have been summarized as basaltic and andesitic flows and breccia, with minor limestone and argillite (Bulletin 86).

Propylitic alteration is widespread throughout the area surrounding the Joanna West showing, predominantly affecting andesitic flows and tuffs. These zones are characterized by chlorite alteration of plagioclase, biotite and hornblende phenocrysts, accompanied by a strong increase in epidote and/or carbonate, pyrite and magnetite in the groundmass (Assessment Report 20671).

The southwest ridge of Mount Gordonia is crossed by numerous north and northwest-trending, steeply dipping faults, with which numerous quartz veins and zones of silicification are associated. The veins are commonly mineralized with gold, silver and copper. One of these veins comprises the Joanna West showing. The quartz vein contains milky white quartz with minor propylitic alteration and is about 40 centimetres wide. Sulphides comprise up to 3 per cent, consisting of chalcopyrite and lesser pyrite; oxides comprise another 3 per cent, consisting of malachite and lesser goethite (Assessment Report 20671).

Grab sample JD-012 analysed 5.65 grams per tonne gold, 15.3 grams per tonne silver and 0.61 per cent copper (Assessment Report 20671).

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ENERGY AND MINERALS DIVISION

PAGE: 1052
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DATE CODED: 1992/09/23
DATE REVISED: 1993/04/27

CODED BY: KJM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 176**

NATIONAL MINERAL INVENTORY:

NAME(S): **GULCH EAST, JOANNA, JOANNA 1-4,**
GULCH, GORDONIA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 28 10 N
LONGITUDE: 127 05 17 W
ELEVATION: 2070 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of Sample DO-109 taken of a mineralized quartz vein, along the west ridge of Mount Gordonia, 300 metres west of the summit. Located in the north-central portion of the Toodoggone gold camp, approximately 290 kilometres north of Smithers (Assessment Report 20671).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6371258
EASTING: 614671

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
COMMENTS: Arsenopyrite is also possibly present.

ASSOCIATED: Quartz

ALTERATION: Chlorite Epidote Carbonate Pyrite Magnetite

ALTERATION TYPE: Malachite Propylitic Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

DIMENSION: STRIKE/DIP: 350/65E

COMMENTS: The quartz vein comprising the Gulch East showing is up to 10 centimetres wide, strikes 350 degrees and dips 65 to 90 degrees east (Assessment Report 20671).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Upper Triassic	Takla	Undefined Formation	
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Quartz Monzonite Porphyry
Agglomerate
Tuff
Rhyolite
Lithic Tuff
Crystal Tuff
Porphyritic Andesite Flow
Massive Andesite Flow
Limestone
Argillite

HOSTROCK COMMENTS: Intrusive hostrock is most probably Early to Middle Jurassic, related to a stock to the south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central portion of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1990

SAMPLE TYPE: Grab

COMMODITY

GRADE

COMMODITY	GRADE	UNIT
Silver	56.7000	Grams per tonne
Gold	1.1950	Grams per tonne
Copper	2.9300	Per cent

COMMENTS: Sample DO-109.

REFERENCE: Assessment Report 20671.

CAPSULE GEOLOGY

The Gulch East mineral showing is located along the southwest ridge of Mount Gordonia, 1.2 kilometres from the summit. The showing is 290 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Gulch East showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Toodoggone volcanics, observed at the Gulch East showing, are described as purple agglomerates, grey to purple tuffs, rhyolites and orange lithic to crystal tuffs (Assessment Report 20671). The oldest rocks are light to dark green porphyritic or massive andesitic flows and pyroclastics of the Takla Group (Assessment Report 20671). These have been summarized as basaltic and andesitic flows and breccia, with minor limestone and argillite (Bulletin 86).

Propylitic alteration is widespread throughout the area surrounding the Gulch East showing, predominantly affecting andesitic flows and tuffs. These zones are characterized by chlorite alteration of plagioclase, biotite and hornblende phenocrysts, accompanied by a strong increase in epidote and/or carbonate, pyrite and magnetite in the groundmass (Assessment Report 20671).

The west ridge of Mount Gordonia is crossed by numerous north and northwest-trending, steeply dipping faults, with which numerous quartz veins and zones of silicification are associated. The veins are commonly mineralized with gold, silver and copper. Individual veins are up to 50 centimetres width with strike lengths of 10 metres or less. They are often widely spaced (greater than 15 metres), generally striking north and dipping steeply east and west (Assessment Report 20671). One of these veins comprises the Gulch East showing. It is up to 10 centimetres wide, strikes 350 degrees and dips 65 to 90 degrees. Mineralization consists of up to 10 per cent blebs, stringers and disseminations of pyrite, chalcopyrite and possibly arsenopyrite. Malachite staining is also present. The hostrock is quartz monzonite porphyry.

A grab sample from the Gulch East showing yielded 1.195 grams per tonne gold, 56.7 grams per tonne silver and 2.93 per cent copper (Assessment Report 20671). Other veins sampled in the vicinity also yielded anomalous assay results.

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W MINER April, 1982

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PAGE: 1055
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DATE CODED: 1992/09/23
DATE REVISED: 1993/04/27

CODED BY: KJM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 177**

NATIONAL MINERAL INVENTORY:

NAME(S): **GULCH WEST, JOANNA, JOANNA 1-4,**
GULCH, GORDONIA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

LATITUDE: 57 28 11 N
LONGITUDE: 127 05 17 W
ELEVATION: 1720 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Location of samples DO-132 and 133, of mineralized quartz veins, taken along the west ridge of Mount Gordonia, 1.15 kilometres west of the summit. The showing is located in the north-central portion of the Toadoggone gold camp, approximately 290 kilometres north of Smithers (Assessment Report 20671).

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6371288
EASTING: 614670

COMMODITIES: Gold Copper Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Carbonate Pyrite Magnetite
 Malachite Hematite

ALTERATION TYPE: Propylitic Argillic Hematite Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic

DIMENSION: STRIKE/DIP: 040/E TREND/PLUNGE:

COMMENTS: The quartz vein comprising the Gulch West showing is 2 to 50 centimetres wide, strikes 040 degrees and dips easterly (Assessment Report 20671).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toadoggone	
Upper Triassic	Takla	Undefined Formation	
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Tuff
Agglomerate
Rhyolite
Lithic Tuff
Crystal Tuff
Quartz Monzonite Porphyry
Andesite Flow
Andesite
Limestone
Argillite

HOSTROCK COMMENTS: Intrusive outcrop is most probably Early to Middle Jurassic, related to a stock to the south.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central portion of the Toadoggone gold camp.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1990
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Silver		2.9000	Grams per tonne
Gold		5.4000	Grams per tonne
Copper		0.2900	Per cent

COMMENTS: Sample DO-133.
REFERENCE: Assessment Report 20671.

CAPSULE GEOLOGY

The Gulch West mineral showing is located along the southwest ridge of Mount Gordonia, 1.2 kilometres from the summit. The showing is 290 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Gulch West showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Toodoggone volcanics, observed at the Gulch West showing, are described as purple agglomerates, grey to purple tuffs, rhyolites and orange lithic to crystal tuffs (Assessment Report 20671). The oldest rocks are light to dark green porphyritic or massive andesitic flows and pyroclastics of the Takla Group (Assessment Report 20671). These have been summarized as basaltic and andesitic flows and breccia, with minor limestone and argillite (Bulletin 86).

Propylitic alteration is widespread throughout the area surrounding the Gulch West showing, predominantly affecting andesitic flows and tuffs. These zones are characterized by chlorite alteration of plagioclase, biotite and hornblende phenocrysts, accompanied by a strong increase in epidote and/or carbonate, pyrite and magnetite in the groundmass (Assessment Report 20671).

The west ridge of Mount Gordonia is crossed by numerous north and northwest-trending, steeply-dipping faults, with which numerous quartz veins and zones of silicification are associated. The veins are commonly mineralized with gold, silver and copper. Individual veins are up to 50 centimetres width with strike lengths of 10 metres or less. They are often widely spaced (greater than 15 metres), generally strike north and dip steeply east and west (Assessment Report 20671).

Mineralization at the Gulch West showing consists of a quartz vein, 2 to 50 centimetres wide, striking 040 degrees and dipping to the east. Hostrocks are altered grey and purple volcanic tuff. Mineralization consists of spotty blebs and crack fillings of pyrite and chalcopyrite with intense malachite and hematite staining. Sample DO-133, taken from this vein, analysed 5.4 grams per tonne gold, 2.9 grams per tonne silver and 0.29 per cent copper (Assessment

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1

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ENERGY AND MINERALS DIVISION

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REPORT: RGEN0100

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DATE CODED: 1992/09/23
DATE REVISED: 1993/04/27

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REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Takla Group surrounding the Lake 2 showing consists of intermediate to basic flows, pyroclastics and sediments. A series of limy beds, interbedded with laminated tuffaceous mudstone, tuffs, cherts and rhyolites, striking northwesterly over a distance of 3.5 kilometres, comprise the Takla Group underlying the Lake 2 showing. These rocks are intruded by a medium-grained, porphyritic, biotite granodiorite to quartz diorite stock. A major fault structure trends north-south along the Upper Belle and Midas Lakes valley (Assessment Report 20087). To the west of this fault lie undifferentiated volcanics of the Toodoggone Formation. To the north, an east-trending fault also separates Takla Group volcanics underlying the Lake 2 showing from undifferentiated Toodoggone Formation volcanics (Assessment Report 20087).

The emplacement of the biotite granodiorite to quartz diorite stock in the vicinity the Lake 2 showing has resulted in the development of abundant stratabound skarn mineralization over 40 metre widths within favorable limy horizons of the Takla Group volcanics. Mineralization within these skarns consists of pyrite, pyrrhotite, sphalerite, chalcopyrite and arsenopyrite (Assessment Report 15068).

Rock chip sample LC85-425, taken from the south-facing slope of a cirque 1.8 kilometres northeast of Contact Peak, analysed 8.9 grams per tonne silver and 0.03 per cent zinc (Assessment Report 15068). This sample was described as feldspar porphyry. No significant mineralization was reported for this sample and it is not known whether it is skarn-type mineralization as is described occurring elsewhere in assessment reports.

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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/09/29
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FIELD CHECK: N

CAPSULE GEOLOGY

The East Ridge mineral prospect is located 1.85 kilometres north-northeast of Oxide Peak and 800 metres west of Lower Belle Lake, on a major north-trending ridge. The prospect is 310 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The East Ridge prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The East Ridge prospect lies along the contact between a fault bound wedge of Takla Group within the Toodoggone Formation volcanics. The Takla volcanics at this locality are described as dark green augite porphyry basalt flows and breccias with minor interbedded siltstone, tuffaceous sediments and chert. It contains limestone lenses that may be part of the Asitka Group (Assessment Report 15412). The Toodoggone volcanics are part of the McClair Member consisting of lavender and grey, crowded, fine to medium-grained, plagioclase porphyritic flows with lesser lapilli tuffs, breccia and minor epiclastic beds (Assessment Report 15412).

The East Ridge prospect consists of a silicified shear zone covering an area 300 metres long by 100 metres wide. It appears to trend 150 to 160 degrees and is not closed off at its southern end. The zone consists of silicification (quartz veining with or without pyrite) in the hangingwall of a shear in the form of a number of subparallel veins and stockworks striking 035 degrees and dipping vertical. The stockworks consists of 1 millimetre to 20 centimetre wide veins variably spaced from 2 centimetres to 2 metres apart (Assessment Report 15412). The veins consist of chalcedonic and crystalline quartz, barite, calcite, galena and sphalerite (Assessment Report 15412).

Rock sampling of this prospect was conducted in 1986. Some of the better results were 14.2 grams per tonne silver (sample ED-94), 0.34 gram per tonne gold (sample ED-95), greater than 1 per cent lead (sample ED-94), 0.169 per cent copper (sample ED-99) and 0.162 per cent barium (sample ED-92) (Assessment Report 15412). The silver assay results from a program conducted in 1988 were also anomalous. Sample L-218, an 80-centimetre channel sample of propylitized andesite porphyry, analysed 4.3 grams per tonne silver (Assessment Report 17683).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
W MINER April, 1982
N MINER March 3,11, Aug.18, Oct.13, 1986

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 1064
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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/09/30
DATE REVISED: 1992/09/30

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

ridge. The showing is 310 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Amethyst showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusives bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Amethyst showing lies immediately west of the western contact of a fault bound wedge of Takla Group, within the Toodoggone Formation volcanics. The Takla volcanics at this locality are described as dark green augite porphyry basalt flows and breccias with minor interbedded siltstone, tuffaceous sediments and chert. It contains limestone lenses that may be part of the Asitka Group (Assessment Report 15412). The Toodoggone volcanics are part of the McClair Member consisting of lavender and grey, crowded, fine to medium-grained, plagioclase porphyritic flows with lesser lapilli tuffs, breccia and minor epiclastic beds (Assessment Report 15412).

The Amethyst showing consists of a series of silicified zones within a gossan that strikes 160 degrees over a length of 700 metres. Thin galena and sphalerite stringers in quartz veinlets occur in the centre of the zone. This silicified and pyritized zone is up to 50 metres wide and occurs directly against propylitic altered volcanics, which in turn rest against a major shear (Assessment Report 17683). The largest lens is approximately 100 metres long by 4 metres wide and consists of blue-grey quartz in an argillic altered andesite hostrock (Assessment Report 15412). A 25-metre argillic zone, in contact with the hangingwall zone, displays dense 5 to 15-centimetre thick silicified lenses with no pyrite, barite in quartz veining and chalcopryrite at or near the contact with the silicified zone (Assessment Report 17683).

Assay results from rock sampling of this showing in 1986 were poor. Some of the better values were 0.4 gram per tonne silver (sample ED-72), 0.211 per cent zinc (sample ED-74), 0.028 per cent copper (sample DY-29), 0.026 per cent lead (sample ED-51) and 0.332 per cent barium (sample DY-30) (Assessment Report 15412). The silver assay results from a program conducted in 1988 were slightly more encouraging. Sample L-159 analysed 3.3 grams per tonne silver and sample L-160 analysed 5.0 grams per tonne silver (Assessment Report 17683).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
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ENERGY AND MINERALS DIVISION

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REPORT: RGEN0100

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DATE CODED: 1992/09/30
DATE REVISED: 1992/09/30

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 181**

NATIONAL MINERAL INVENTORY:

NAME(S): **OXIDE PEAK**, AMETHYST, KIDVIEW

MINING DIVISION: Omineca

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094E06E
 BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 28 59 N
 LONGITUDE: 127 08 58 W
 ELEVATION: 1700 Metres

NORTHING: 6372671
 EASTING: 610949

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample ED-43, taken from a shear zone on the northern flank of Oxide Peak, 450 metres north of the summit proper. The showing is located in the north-central part of the Toodoggone gold camp, approximately 310 kilometres north of Smithers (Assessment Report 15412).

COMMODITIES: Silver Molybdenum Gold Lead Zinc Copper

MINERALS

SIGNIFICANT: Pyrite
 ASSOCIATED: Quartz Barite
 ALTERATION: Silica Pyrite Epidote Chlorite Magnetite
 ALTERATION TYPE: Silicific'n Propylitic
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Stockwork Vein Podiform
 CLASSIFICATION: Epithermal Epigenetic
 TYPE: H05 Epithermal Au-Ag: low sulphidation
 DIMENSION: 350 x 10 Metres STRIKE/DIP: 150/90 TREND/PLUNGE:
 COMMENTS: The showing covers a recessive weathering shear zone, 350 by 10 metres and striking 150 degrees, dipping vertically.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Andesite
 Plagioclase Porphyritic Flow
 Lapilli Tuff
 Volcanic Breccia
 Epiclastic

HOSTROCK COMMENTS: The age of the McClair Member of the Toodoggone Formation is between 197 and 193.8 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
 TERRANE: Stikine
 METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1986
 SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	14.0000	Grams per tonne
Gold	0.2600	Grams per tonne
Copper	0.0406	Per cent
Molybdenum	0.0148	Per cent
Lead	0.3120	Per cent
Zinc	0.0520	Per cent

COMMENTS: Silver and molybdenum from sample ED-23; lead from ED-25; zinc and copper from ED-24; and gold from ED-18.

REFERENCE: Assessment Report 15412.

CAPSULE GEOLOGY

The Oxide Peak mineral showing is located on the northern flank of Oxide Peak and 450 metres north of the summit proper. The showing is 310 kilometres north of Smithers. It lies within the Omineca-

CAPSULE GEOLOGY

Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Oxide Peak showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Oxide Peak showing lies south of the western contact of a fault bound wedge of Takla Group, within Toodoggone Formation volcanics. The Toodoggone volcanics are part of the McClair Member consisting of lavender and grey, crowded, fine to medium grained, plagioclase porphyritic flows with lesser lapilli tuffs, breccia and minor epiclastic beds (Assessment Report 15412). The Takla volcanics within this fault bound wedge are described as dark green augite porphyry basalt flows and breccias with minor interbedded siltstone, tuffaceous sediments and chert. It contains limestone lenses that may be part of the Asitka Group (Assessment Report 15412).

The Oxide Peak showing consists of a recessive weathering shear zone, approximately 350 metres long by 10 metres wide. The zone strikes 150 degrees and dips vertically. At least three resistant weathering silicified pods are found within this shear zone. Silicified zones range from quartz-barite stringers in pyritic andesites to intensely silicified and pyritic, porphyritic volcanics exposed in a 6 by 4-metre outcrop (Assessment Report 15412).

Assay results from rock sampling of this showing in 1986 were 14.0 grams per tonne silver (sample ED-23), 0.26 gram per tonne gold, 0.312 per cent lead (sample ED-25), 0.052 per cent zinc (sample ED-24), 0.0406 per cent copper (sample ED-24), 0.0148 per cent molybdenum (sample ED-23) and 0.332 per cent barium (sample ED-17) (Assessment Report 15412).

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EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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pp. 409-415; 1991, pp. 207-216
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GSC OF 306; 483
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W MINER April, 1982
N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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Jurassic Toodoggone Formation, Toodoggone Mining District, British
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DATE CODED: 1992/10/01
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 182**

NATIONAL MINERAL INVENTORY:

NAME(S): **BILL (NORTH)**, BILL, BILL 1-3,
T-BIRD, T-BIRD 1-8

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E13W
BC MAP:

LATITUDE: 57 46 57 N
LONGITUDE: 127 45 40 W
ELEVATION: 1850 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of samples 223 and 224, 750 metres northeast of the Bill prospect (094E 092). This showing is located 4.25 kilometres west of Park Creek and 14.5 kilometres north-northwest of Spruce Hill (Assessment Report 12559). Dease Lake is 135 kilometres to the northwest.

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

NORTHING: 6405170
EASTING: 573671

COMMODITIES: Gold Copper Zinc

MINERALS

SIGNIFICANT: Gold Arsenopyrite Pyrite Chalcopyrite Sphalerite

COMMENTS: Mineralogy is inferred from drilling on the Bill prospect (094E 092).

ASSOCIATED: Quartz Carbonate

COMMENTS: See comment for significant minerals.

ALTERATION: Carbonate Sericite Chlorite Silica

COMMENTS: See comment for significant minerals.

ALTERATION TYPE: Carbonate Sericitic Chloritic Silicific'n Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound
CLASSIFICATION: Mesothermal Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Unnamed/Unknown Group	Undefined Formation	
Permian	Asitka	Undefined Formation	

LITHOLOGY: Greenstone
Quartz Muscovite Carbonate Schist
Graphitic Schist
Chlorite Schist
Marble
Mafic Dike
Dacite
Andesite
Rhyolite

HOSTROCK COMMENTS: A tentative Devonian to Permian age is assigned to these hostrocks. The fossils are Mississippian (GSC Paper 80-1B, pages 207-211).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

PHYSIOGRAPHIC AREA: Spatsizi Plateau

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist

COMMENTS: These rocks have undergone at least two phases of deformation.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984

SAMPLE TYPE: Grab

COMMODITY

GRADE

Gold 21.7000 Grams per tonne

COMMENTS: Sample 223, one of two anomalous samples taken from this area.

REFERENCE: Assessment Report 12559.

CAPSULE GEOLOGY

The Bill (North) showing, consisting of two anomalous rock samples taken from undifferentiated greenstone 750 metres northeast of the Bill prospect (094E 092), is located 4.25 kilometres west of Park Creek and 14.5 kilometres north-northwest of Spruce Hill (Assessment Report 12559). Dease Lake is 135 kilometres to the northwest.

CAPSULE GEOLOGY

The Bill (North) showing lies on the eastern edge of the Intermontane Belt near the Kutcho fault, marking the boundary with rocks of the Omineca Crystalline Belt. The showing is underlain by a sequence of low grade metamorphosed volcanic and sedimentary rocks. Early regional mapping correlated these rocks with the Permian Asitka Group based on lithological similarities (Geological Survey of Canada Open File 483). Fossil evidence from later regional mapping gives a Mississippian age for at least part of the sequence (Geological Survey of Canada Paper 80-1B, pages 207-211). A tentative Devonian to Permian age is assigned to these hostrocks.

Five stratigraphic units have been recognized, and are, from oldest to youngest: feldspathic chlorite schist; phyllite, sericite and calcareous sericite schist; massive rhyolite, chert and sericite schist; carbonate; and an upper feldspathic chlorite schist. The rocks are complexly folded and have undergone at least two phases of deformation. They are predominantly calcalkaline with minor alkaline members. Two Early Jurassic plutonic bodies intrude the formation. One is quartz monzonite in composition and the other is diorite. The sequence is similar in many respects to rocks of the Kutcho Formation in the southeastern corner of the Cry Lake map area (NTS map sheet 104I).

Lithologies underlying the Bill (North) showing have been subdivided into 9 units based on primary mineralogy and metamorphic grade evident in drill core from the Bill prospect (094E 092). These are: graphite schist, marble, chlorite feldspar schist, chlorite schist, chlorite schist with numerous quartz segregations, spotted chlorite schist, calcareous chlorite schist, quartz-muscovite-carbonate schist and mafic dike. All these rocks are highly deformed showing a strong schistose foliation which obliterates most of the primary volcanic and sedimentary textures.

Alteration observed in drill core at the Bill prospect consists of five types. Oxidation is intense in fault zones and adjacent open fractures. Chlorite alteration is pervasive in dacitic and andesitic protoliths. Sericite alteration is intense in rhyolitic protoliths as almost entire replacement or as sericitized bands preferentially altering certain compositional layering. Quartz veins and bands often exhibit sericite alteration in country rocks along their margins. Multiple episodes of carbonate alteration is pervasive in all units. At least three stages of crystalline quartz carbonate veinlets are present, two of which are typically mineralized with arsenopyrite and pyrite. Silicification is locally present as quartz flooding in tuffaceous protoliths (Assessment Report 12559). These alterations are assumed to be present at the Bill (North) showing also.

A study of mineralized drill core with greater than 1 gram per tonne gold revealed several consistent parameters of mineralization. Gold mineralization always occurs within quartz and arsenopyrite +/- carbonate veins and usually occurs at both the lower and upper contact of a quartz-muscovite schist, often extending into the underlying and overlying greenstones. Quartz-arsenopyrite +/- carbonate veins have a consistent strike of 90 to 110 degrees with dips varying from 70 degrees south to 70 degrees north. Visible gold was found in most samples with greater than 10 grams per tonne gold, the gold lying along the outer part of the quartz vein just inside the outer arsenopyrite selvage. This unit has all the appearances of the quartz-sericite-pyrite zone within a copper porphyry deposit. The alteration assemblage represents a mesothermal package related to gold mineralization (Assessment Report 12559). Minor chalcopyrite and sphalerite were observed in drill core.

At the Bill (North) showing, two grab samples from undifferentiated greenstone and carbonate altered quartz-muscovite-carbonate schist yielded significant gold. A value of 11.0 grams per tonne gold was obtained from sample 224 and 21.70 grams per tonne gold from sample 223 (Assessment Report 12559).

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- GSC BULL 12; 270; 376
- GSC OF 306; 483
- GSC MAP 14-1973
- GSC P 71-1A, pp. 23-26; 72-1A, pp. 26-29, 29-32; 74-1A, pp. 13-16; 76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246; 80-1A, p. 348; *80-1B, pp. 207-211; 83-1A, pp. 221-227; 84-1A, pp. 105-108

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DATE CODED: 1992/12/15
DATE REVISED: 1992/12/15

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 183**

NATIONAL MINERAL INVENTORY:

NAME(S): **BILL (WEST)**, BILL, BILL 1-3,
T-BIRD, T-BIRD 1-8

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E13W
BC MAP:
LATITUDE: 57 46 27 N
LONGITUDE: 127 47 01 W
ELEVATION: 1680 Metres

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6404218
EASTING: 572350

LOCATION ACCURACY: Within 500M
COMMENTS: The location of mineralized sample 285, 750 metres southwest of the Bill prospect (094E 092). The Bill (West) showing is located 5.5 kilometres west of Park Creek and 14.25 kilometres north-northwest of Spruce Hill (Assessment Report 12559). Dease Lake is 135 kilometres to the northwest.

COMMODITIES: Gold Copper Zinc

MINERALS

SIGNIFICANT: Gold Arsenopyrite Pyrite Chalcopyrite Sphalerite
COMMENTS: The minerals are inferred from drilling on the Bill prospect (094E 092).

ASSOCIATED: Quartz Carbonate
COMMENTS: See comment for significant minerals.
ALTERATION: Carbonate Sericite Chlorite Silica
COMMENTS: See comment for significant minerals.

ALTERATION TYPE: Carbonate Sericitic Chloritic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound
CLASSIFICATION: Mesothermal Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE

Upper Paleozoic
Permian

GROUP

Unnamed/Unknown Group
Asitka

FORMATION

Unnamed/Unknown Formation
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Greenstone
Quartz Muscovite Carbonate Schist
Graphitic Schist
Chlorite Schist
Marble
Mafic Dike
Dacite
Andesite
Rhyolite

HOSTROCK COMMENTS: A tentative Devonian to Permian age is assigned to these hostrocks. The fossils are Mississippian (GSC Paper 80-1B, pages 207-211).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist

COMMENTS: These rocks have undergone at least two phases of deformation.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1984

SAMPLE TYPE: Grab

COMMODITY

GRADE

Gold

105.4000 Grams per tonne

COMMENTS: Sample 285.
REFERENCE: Assessment Report 12559.

CAPSULE GEOLOGY

The Bill (West) showing, consisting of an anomalous rock sample taken from undifferentiated greenstone 750 metres southwest of the Bill prospect (094E 092), is located 5.5 kilometres west of Park Creek and 14.25 kilometres north-northwest of Spruce Hill (Assessment

CAPSULE GEOLOGY

Report 12559). Dease Lake is 135 kilometres to the northwest.

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Lithologies underlying the Bill (West) showing have been subdivided into 9 units based on primary mineralogy and metamorphic grade evident in drill core from the Bill prospect (094E 092). These are: graphite schist, marble, chlorite feldspar schist, chlorite schist, chlorite schist with numerous quartz segregations, spotted chlorite schist, calcareous chlorite schist, quartz-muscovite-carbonate schist and mafic dike. All these rocks are highly deformed showing a strong schistose foliation which obliterates most of the primary volcanic and sedimentary textures.

Alteration observed in drill core at the Bill prospect consists of five types. Oxidation is intense in fault zones and adjacent open fractures. Chlorite alteration is pervasive in dacitic and andesitic protoliths. Sericite alteration is intense in rhyolitic protoliths as almost entire replacement or as sericitized bands preferentially altering certain compositional layering. Quartz veins and bands often exhibit sericite alteration in country rocks along their margins. Multiple episodes of carbonate alteration is pervasive in all units. At least three stages of crystalline quartz carbonate veinlets are present, two of which are typically mineralized with arsenopyrite and pyrite. Silicification is locally present as quartz flooding in tuffaceous protoliths (Assessment Report 12559). These alterations are assumed to be present at the Bill (West) showing also.

A study of mineralized drill core with greater than 1 gram per tonne gold revealed several consistent parameters of mineralization. Gold mineralization always occurs within quartz and arsenopyrite plus/minus carbonate veins and usually occurs at both the lower and upper contact of a quartz-muscovite schist, often extending into the underlying and overlying greenstones. Quartz-arsenopyrite plus/minus carbonate veins gave a consistent strike of 90 to 110 degrees with a dip varying from 70 degrees south to 70 degrees north. Visible gold was found in most samples with greater than 10 grams per tonne gold, the gold lying along the outer part of the quartz vein just inside the outer arsenopyrite selvage. This unit has all the appearances of the quartz-sericite-pyrite zone within a copper porphyry deposit. The alteration assemblage represents a mesothermal package related to gold mineralization (Assessment Report 12559). Minor chalcopyrite and sphalerite were observed in drill core.

At the Bill (West) showing, a grab sample (sample 285) from undifferentiated greenstone analysed 105.4 grams per tonne gold (Assessment Report 12559).

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- GSC OF 306; 483
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- GSC MAP 14-1973

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 1076
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WWW http://www.infomine.com/properties/BILL_html

DATE CODED: 1992/12/15
DATE REVISED: 1992/12/15

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 184**

NATIONAL MINERAL INVENTORY:

NAME(S): **FALCON A1**, FALCON A, PEREGRINE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 26 49 N
LONGITUDE: 127 02 59 W
ELEVATION: 1815 Metres

NORTHING: 6368819
EASTING: 617042

LOCATION ACCURACY: Within 500M

COMMENTS: Location of samples FR-89-44 and 45, taken from a quartz vein within a gossanous zone at the northern end of a north-northwest trending ridge, 2.85 kilometres south-southeast of Mount Gordonia and 7.0 kilometres north of the confluence of McClair Creek and the Toodoggone River (Assessment Report 19097). Smithers is located 300 kilometres to the south.

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 3 x 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The Falcon A1 showing consists of a quartz vein, 3 metres long by 2 metres wide, where exposed within a gossan.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Unnamed/Unknown Informal
Lower Jurassic			

LITHOLOGY: Dacitic Porphyritic Flow
Lapilli Tuff
Dacite
Pyroclastic Breccia
Accretionary Lapilli Tuff
Porphyritic Andesite
Basalt Lava Flow
Basalt
Volcanic Conglomerate
Siltstone

HOSTROCK COMMENTS: The Toodoggone volcanics are Lower Jurassic in age and the intrusive stock is coeval (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 5.9000 Grams per tonne
Copper 0.5100 Per cent
COMMENTS: Sample FR-89-45, a 2-metre chip sample across the quartz vein.
REFERENCE: Assessment Report 19097.

CAPSULE GEOLOGY

The Falcon A1 showing is located at the northern end of a north-northwest trending ridge, 2.85 kilometres south-southeast of Mount Gordonia and 7.0 kilometres north of the confluence of McClair Creek and the Toodoggone River (Assessment Report 19097). The

CAPSULE GEOLOGY

showing is 300 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Falcon A1 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Falcon A1 showing is underlain by felsic to intermediate Toodoggone volcanics. An Early Jurassic granodiorite to quartz diorite stock lies immediately to the south and southwest. The volcanics are gently south-dipping and consist of dacitic porphyritic flows and lapilli and crystal lapilli tuffs (Assessment Report 19097). These have been mapped by Diakow as undivided Toodoggone volcanics consisting of welded lapilli tuff and pyroclastic breccia, rare accretionary lapilli tuff, porphyritic andesite and subordinate basalt lava flows, interspersed volcanic conglomerate, and laminated siltstone and mudstone (Bulletin 86).

The showing consists of a quartz vein within a gossanous zone. The quartz vein is exposed over a 3-metre length and a 2-metre width and contains localized malachite and chalcocopyrite.

In 1985, rock grab sample R 223 was taken near this quartz vein assaying 10.6 grams per tonne silver and 0.035 gram per tonne gold (Assessment Report 14709). Subsequent exploration in 1989 yielded further anomalous values from the quartz vein described above. Grab sample FR-89-44 analysed 7.2 grams per tonne silver, 0.024 gram per tonne gold and 0.32 per cent copper (Assessment Report 19097). Sample FR-89-45, a 2-metre chip sample from this same vein analysed 5.9 grams per tonne silver, 0.014 gram per tonne gold and 0.51 per cent copper (Assessment Report 19097).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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N MINER October 13, 1986
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RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 1079
REPORT: RGEN0100

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DATE CODED: 1992/10/08
DATE REVISED: 1992/10/08

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 185**

NATIONAL MINERAL INVENTORY:

NAME(S): **FALCON A2**, FALCON A, PEREGRINE,
JD-SPUR

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 26 34 N
LONGITUDE: 127 04 00 W
ELEVATION: 1700 Metres

NORTHING: 6368326
EASTING: 616038

LOCATION ACCURACY: Within 500M

COMMENTS: Location of Sample PD-89-25 taken on the west side of a north-facing cirque 3 kilometres south of Mount Gordon and 6.5 kilometres north of the confluence of McClair Creek and the Toadoggone River (Assessment Report 19097). Smithers is located 300 kilometres to the south.

COMMODITIES: Silver Gold Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Chalcopyrite Chalcocite
ASSOCIATED: Pyrite Quartz
ALTERATION: Silica Limonite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 150 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A zone of quartz veining and silicification is traceable in float and outcrop for 150 metres. Significant mineralization is also found 250 metres to the south-southwest.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toadoggone	Unnamed/Unknown Informal
Lower Jurassic			

LITHOLOGY: Altered Andesite
Dacitic Porphyritic Flow
Lapilli Tuff
Crystal Lapilli Tuff
Welded Lapilli Tuff
Pyroclastic Breccia
Accretionary Lapilli Tuff
Porphyritic Andesite
Basalt Lava Flow
Volcanic Conglomerate

HOSTROCK COMMENTS: The Toadoggone volcanics are Lower Jurassic in age and the intrusive stock is coeval (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite
COMMENTS: Located in the north-central part of the Toadoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1989
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Silver	6.8000 Grams per tonne
Gold	0.0180 Grams per tonne
Copper	0.1200 Per cent
Lead	1.6000 Per cent
Zinc	1.1400 Per cent

COMMENTS: Sample PD-89-25, taken from the main alteration zone.
REFERENCE: Assessment Report 19097.

CAPSULE GEOLOGY

The Falcon A2 showing is located on the west side of a north-facing cirque, 3.0 kilometres south of Mount Gordonia and 6.5 kilometres north of the confluence of McClair Creek and the Toodoggone River (Assessment Report 19097). The showing is 300 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Falcon A2 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Falcon A2 showing is underlain by felsic to intermediate Toodoggone volcanics. An Early Jurassic granodiorite to quartz diorite stock lies immediately to the south and southwest. The volcanics are gently south dipping and consist of dacitic porphyritic flows and lapilli and crystal lapilli tuffs (Assessment Report 19097). These have been mapped by Diakow as undivided Toodoggone volcanics consisting of welded lapilli tuff and pyroclastic breccia, rare accretionary lapilli tuff, porphyritic andesite and subordinate basalt lava flows, interspersed volcanic conglomerate, and laminated siltstone and mudstone (Bulletin 86).

The Falcon A2 showing consists of a system of quartz veining and silicification within limonite-altered andesite containing galena and chalcopyrite, traceable over 150 metres in float and outcrop. Weakly altered andesite with local chalcocite and malachite concentrated in fractures occurs 250 metres to the south-southwest near a small pond.

Sample PR-89-25, a grab sample from the main part of this zone analysed 6.8 grams per tonne silver, 0.018 gram per tonne gold, 1.60 per cent lead, 1.14 per cent zinc and 0.12 per cent copper (Assessment Report 19097). Two samples taken near a small pond to the south-southwest analysed as follows: sample PD-89-46 yielded 30.7 grams per tonne silver, 0.319 gram per tonne gold and 0.61 per cent copper; sample PD-89-46 yielded 55.5 grams per tonne silver, 0.828 gram per tonne gold and 1.08 per cent copper (Assessment Report 19097).

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GCNL #23(Feb.1), 1985; #165(Aug.27), 1986; #239(Dec.13), 1995
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1082
REPORT: RGEN0100

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Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/10/08
DATE REVISED: 1997/02/26

CODED BY: KJM
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 186**

NATIONAL MINERAL INVENTORY:

NAME(S): **MCCLAIR 3**, MCCLAIR-81 GROUP, MCCLAIR 2,
MCCLAIR 4, MCCLAIR 5

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 24 56 N
LONGITUDE: 127 04 20 W
ELEVATION: 1680 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6365287
EASTING: 615791

COMMENTS: The location of sample 71001 from a northwest-trending ridge, 6.3 kilometres northeast of Kadah Lake and 3.5 kilometres northwest of the confluence of McClair Creek and the Toodoggone River (Assessment Report 9995). Smithers is located 300 kilometres to the south.

COMMODITIES: Lead Zinc Copper Silver

MINERALS

SIGNIFICANT: Pyrite Galena Sphalerite Chalcopyrite
COMMENTS: The modal abundance of galena is roughly 2 per cent, chalcopyrite and sphalerite 1 per cent or greater and pyrite 5 per cent or less (Assessment Report 9995).

ASSOCIATED: Quartz Carbonate Epidote
ALTERATION: Quartz Carbonate Epidote Sericite Pyrite

COMMENTS: Quartz-sericite alteration is present but subordinate to quartz, carbonate and epidote alteration (Assessment Report 9995).

ALTERATION TYPE: Silicific'n Propylitic Carbonate Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Black Lake Suite

LITHOLOGY: Diabase Dike
Diorite Dike
Monzodiorite
Quartz Diorite
Granodiorite
Dacite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1981
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Silver		2.8000	Grams per tonne
Lead		0.8000	Per cent
Zinc		0.5250	Per cent

COMMENTS: Assay results are from Sample 71001.

REFERENCE: Assessment Report 9995.

CAPSULE GEOLOGY

The McClair 3 showing consists of a mineralized diabase to diorite dike hosted in granodiorite stock, exposed on a northwest-trending ridge 6.3 kilometres northeast of Kadah Lake and 3.5 kilometres northwest of the confluence of McClair Creek and the Toodoggone River (Assessment Report 9995). The showing is 300 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The McClair 3 showing is situated within a Mesozoic volcanic arc

CAPSULE GEOLOGY

assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The McClair 3 showing is dominantly underlain by a monzodiorite to granodiorite stock (Assessment Report 9995 and Bulletin 86). Within this stock a complex series of dikes ranging from diabase to diorite and dacite, with similar textural variations, occurs. They are locally altered and frequently contain quartz and carbonate veins with minor pyrite and traces of other sulphides (Assessment Report 9995).

Alteration of this stock occurs mainly as veins. Minor zones of quartz-sericite alteration is also present. Quartz (+/- carbonate and epidote) veins and stockworks cut the hostrock irregularly and host mineralization (Assessment Report 9995). The veins are clear to milky and occasionally display vuggy and drusy textures. Generally less than 10 per cent of the rock is vein material but locally up to 40 per cent. Pyrite is the dominant sulphide, comprising 5 per cent or less of sulphides. Chalcopyrite and sphalerite comprise 1 per cent or more and galena roughly 2 per cent (Assessment Report 9995). All occur as disseminations, either fine grained or as blebs.

Sample 71001, taken from a diabase to diorite dike hosted in the stock, analysed 2.8 grams per tonne silver, 0.8 per cent lead and 0.525 per cent zinc (Assessment Report 9995). A second sample taken 250 metres lower in the creek gully, analysed 2.7 grams per tonne silver and 0.618 per cent lead (Assessment Report 9995).

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
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MINFILE NUMBER: **094E 187**

NATIONAL MINERAL INVENTORY:

NAME(S): **AIR**, AIR 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 27 00 N
LONGITUDE: 127 09 58 W
ELEVATION: 1560 Metres

NORTHING: 6368964
EASTING: 610049

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample 5974C, taken from feldspar porphyry outcrop, 3.3 kilometres southwest of Oxide Peak on the south side of McClair Creek and 5.6 kilometres north of Kadah Lake (Assessment Report 10471). The showing is about 290 kilometres north of Smithers.

COMMODITIES: Gold Silver Zinc

MINERALS

SIGNIFICANT: Pyrite
COMMENTS: Disseminated pyrite was the only mineralization observed.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Feldspar Porphyry
Rhyolite
Tuff
Heterolithic Lapilli Tuff
Heterolithic Block Tuff
Andesite Flow
Dike
Mudstone
Conglomerate

HOSTROCK COMMENTS: The age of the McClair Member of the Toodoggone Formation is between 197 and 193.8 Ma (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1981

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

11.6000

Grams per tonne

Gold

4.2000

Grams per tonne

Zinc

0.0212

Per cent

COMMENTS: Sample 5974C.

REFERENCE: Assessment Report 10471.

CAPSULE GEOLOGY

The Air showing consists of a mineralized diabase to diorite dike hosted in a granodiorite stock, exposed on a northwest-trending ridge 6.3 kilometres northeast of Kadah Lake and 3.5 kilometres northwest of the confluence of Air Creek and the Toodoggone River (Assessment Report 9995). The showing is 300 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

The Air showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and

CAPSULE GEOLOGY

to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Air showing is underlain by Toodoggone volcanics consisting of rhyolite, tuff and feldspar porphyry. The tuffs strike northwest and dip 30 to 45 degrees. It is assumed that the rhyolite has a similar attitude. The feldspar porphyry appears to intrude the volcanics; the contact between the porphyry and the tuff was observed to be sharp (Assessment Report 10471). These rocks are mapped as belonging to a fault bound block of the McClair Member of the Toodoggone volcanics, surrounded by volcanics of the Attycelley Member. The McClair Member volcanics are described as heterogeneous lapilli to block tuffs, andesite flows and numerous co-genetic dikes and subvolcanic plugs, minor mudstone and conglomerate (Bulletin 86).

Mineralization observed at and around the Air showing to date consists of disseminated pyrite in rhyolites and feldspar porphyry (Assessment Report 10471). Sample 5974C, taken from an outcrop of feldspar porphyry, analysed 11.6 grams per tonne silver, 4.2 grams per tonne gold and 0.0212 per cent zinc (Assessment Report 10471).

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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/10/09
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 188**

NATIONAL MINERAL INVENTORY:

NAME(S): **HORN**, HORN 1-5

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 30 24 N
LONGITUDE: 127 13 15 W
ELEVATION: 1890 Metres

NORTHING: 6375184
EASTING: 606600

LOCATION ACCURACY: Within 1 KM

COMMENTS: The approximate location of two rock samples (NM85-8 and 10), taken from and below a ridge on the Horn 2 and 4 mineral claims (Assessment Report 14435). The showing is located 4.75 kilometres northeast of Tuff Peak and 5.5 kilometres southwest of Breccia Peak.

COMMODITIES: Silver Lead

MINERALS

SIGNIFICANT: Pyrite Galena
COMMENTS: A quartz and chalcedony vein with disseminated galena was found on the Horn claims but it is not known whether this vein corresponds to the location of rock samples NM85-8 and 10.

ASSOCIATED: Quartz Chalcedony Calcite

ALTERATION: Silica Clay Malachite

ALTERATION TYPE: Silicification Argillic Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	Black Lake Suite

LITHOLOGY: Feldspar Porphyry Flow
Andesitic Breccia
Andesite
Feldspar Porphyry Dike
Conglomerate
Heterolithic Lapilli Tuff
Heterolithic Block Tuff
Mudstone
Quartz Hornblende Plagioclase Dike
Quartz Chalcedony Vein

HOSTROCK COMMENTS: The McClair Member is Lower Jurassic in age.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1985

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

9.4000

Grams per tonne

COMMENTS: Sample NM85-8, from a drusy quartz vein in argillic altered volcanics.

REFERENCE: Assessment Report 14435.

CAPSULE GEOLOGY

The Horn showing consists of a mineralized diabase to diorite dike hosted in a granodiorite stock, exposed on a northwest-trending ridge 6.3 kilometres northeast of Kadah Lake and 3.5 kilometres northwest of the confluence of Horn Creek and the Toodoggone River (Assessment Report 9995). The showing is 300 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the north-central portion of the Toodoggone gold camp.

CAPSULE GEOLOGY

The Horn showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Outcrops comprising and surrounding the Horn showing are purple or grey porphyry flows and andesite breccias. Minor intrusive feldspar porphyry dikes and conglomerates occur (Assessment Report 14435). These are assigned to the McClair Member of Toadoggone Formation. The McClair Member is described in general as heterogeneous lapilli to block tuffs, andesite flows, and numerous cogenetic dikes and plugs, minor mudstone and conglomerate (Bulletin 86). These are intruded by small localized quartz, hornblende and feldspar porphyritic dikes and subvolcanic intrusions which are contemporaneous with Toadoggone volcanics (Bulletin 86).

Alteration consists of a few narrow bands of pyrite and argillic alteration associated with shear zones or feldspar porphyry dikes. A quartz-chalcedony vein, with malachite staining and disseminated galena, was found at one location. It is not reported whether this vein corresponds to the location of either of two rock samples which yielded anomalous silver. Both samples NM85-8 and 10 consist of rusty, weakly argillic-altered volcanics. Sample NM85-8 contained drusy quartz veining and assayed 9.4 grams per tonne silver. Sample NM85-10 had calcite veining with minor malachite staining and assayed 7.5 grams per tonne silver (Assessment Report 14435).

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MINFILE NUMBER: **094E 189**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANT**, ANT 1-3, LEXIM,
LEXIM 1-3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 25 39 N
LONGITUDE: 127 16 18 W
ELEVATION: 1685 Metres

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6366294
EASTING: 603779

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample 85PS79R, from mineralized zone at the southern end of a ridge located 7.5 kilometres south-southeast of Tuff Peak and 4.2 kilometres east-northeast of the Mets prospect (094E 093) (Assessment Report 15257). Smithers is located 305 kilometres to the south.

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Unknown
ASSOCIATED: Quartz Calcite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Breccia Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 193.8 +/- 2.6 Ma			
DATING METHOD: Argon/Argon			
MATERIAL DATED: Hornblende			

LITHOLOGY: Porphyritic Dacite
Feldspar Hornblende Biotite Porphyry
Andesite
Crystal Lithic Tuff
Lapilli Tuff
Massive Flow
Breccia
Rhyolite
Rhyolitic Lahar
Conglomerate

HOSTROCK COMMENTS: The age date is the older of two argon-argon ages for the Attycelley Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Spatsizi Plateau
GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 26.6000 Grams per tonne
Gold 0.2000 Grams per tonne

COMMENTS: Sample 85PS79R. Gold value done by fire assay and silver value done by ICP.

REFERENCE: Assessment Report 15257.

CAPSULE GEOLOGY

The Ant showing consists of a zone of silicification with stockwork quartz and calcite veinlets and breccia, located at the southern end of a ridge, 7.5 kilometres south-southeast of Tuff Peak

CAPSULE GEOLOGY

and 4.2 kilometres east-northeast of the Mets prospect (094E 093) (Assessment Report 15257). The showing lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp. Smithers is 305 kilometres to the south.

The Ant showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Ant showing is underlain by volcanics of the Attycelley Member of the Toodoggone Formation. At this showing these consist of varieties of feldspar, hornblende, and biotite porphyries of andesite to dacite composition; crystal-lithic tuffs and lapilli tuffs, massive flows, chaotic breccias and lahar of rhyolitic composition, and conglomerate, sandstone, mudstone and dikes (Assessment Report 15257). The showing lies between two of four north-northwest-trending faults transecting the area around the Ant showing.

At the Ant showing, a stockwork consisting of numerous quartz and calcite veinlets, often brecciated and cemented with quartz and calcite, occurs in porphyritic dacite. No sulphides are reported from this alteration zone. Rock chip samples taken from this zone in 1982 did not yield any anomalous values. Sample 5023C analysed 0.005 gram per tonne gold and 0.9 gram per tonne silver (Assessment Report 10473). Subsequent resampling from this zone (sample 85PS79R) in 1985 did, however, analyse 0.200 gram per tonne gold and 26.6 grams per tonne silver (Assessment Report 15257).

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Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

MINFILE NUMBER: **094E 190**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEXIM**, LEXIM 1-3, ANT,
ANT 1-3

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 27 02 N
LONGITUDE: 127 16 04 W
ELEVATION: 1700 Metres

NORTHING: 6368866
EASTING: 603947

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample 85PS59R, taken from a zone of quartz stringers with minor pyrite located 5.0 kilometres south-southeast of Tuff Peak and 4.0 kilometres east-northeast of the Mets prospect (094E 093) (Assessment Report 15257). Smithers is located 305 kilometres to the south.

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Chalcedony
ALTERATION: Pyrite
ALTERATION TYPE: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 193.8 +/- 2.8 Ma			
DATING METHOD: Argon/Argon			
MATERIAL DATED: Hornblende			

LITHOLOGY: Feldspar Hornblende Biotite Porphyry
Andesite
Dacite
Crystal Lithic Tuff
Lapilli Tuff
Massive Flow
Breccia
Rhyolite
Rhyolitic Lahar
Conglomerate

HOSTROCK COMMENTS: The age date is the older of two argon-argon ages for the Attycelley member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Spatsizi Plateau
RELATIONSHIP:
GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY: GRADE
Silver 100.0000 Grams per tonne
Gold 27.2000 Grams per tonne

COMMENTS: Sample 85PS59R. The silver value is greater than 100 grams per tonne.
REFERENCE: Assessment Report 15257.

CAPSULE GEOLOGY

The Lexim showing consists of a zone of quartz stringers with minor pyrite, in an east-facing cirque, located 5.0 kilometres south-southeast of Tuff Peak and 4.0 kilometres east-northeast of the

CAPSULE GEOLOGY

Mets prospect (094E 093) (Assessment Report 15257). Smithers is located 305 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The Lexim showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Lexim showing is underlain by volcanics of the Attycelley Member of the Toodoggone Formation. At this showing these consist of varieties of feldspar, hornblende, and biotite porphyries of andesite to dacite composition; crystal-lithic tuffs and lapilli tuffs, massive flows, chaotic breccias and lahar of rhyolitic composition, and conglomerate, sandstone, mudstone and dikes (Assessment Report 15257). The showing lies between two of four north-northwest trending faults transecting the area around the Lexim showing.

At the Lexim showing, quartz stringers occur in orange, altered feldspar porphyritic tuff. Minor pyrite was noted. Three hundred metres to the northeast, a band of quartz float is traceable in a northwest direction for about 500 metres. Textures in float consist of coxcomb and banded (chalcedony) quartz. Assay results from float material ranges from 0.105 to 0.920 gram per tonne gold and 19.1 to 68.2 grams per tonne silver (Assessment Report 15257). Sample 85PS59R, taken from the outcrop containing quartz stringers, analysed 27.2 grams per tonne gold and greater than 100 grams per tonne silver (Assessment Report 15257).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
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EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1093
REPORT: RGEN0100

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DATE CODED: 1992/10/16
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 191**

NATIONAL MINERAL INVENTORY:

NAME(S): **DREAM**, PIPE, SILVER CLOUD 1-3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 18 08 N
LONGITUDE: 127 14 45 W
ELEVATION: 1650 Metres

NORTHING: 6352390
EASTING: 605690

LOCATION ACCURACY: Within 500M

COMMENTS: The location of samples AA27019 and AA27027 (Assessment Report 11506).
The showing is located 5.6 kilometres southwest of the Lawyers mine
(094E 066) and 3.5 kilometres northeast of Lawyers Pass, approximately
290 kilometres north of Smithers.

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Epidote
ALTERATION: Quartz Silica Kaolinite Pyrite Carbonate
Epidote
ALTERATION TYPE: Silicific'n Argillic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Disseminated
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 150 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A zone of silification and quartz veining, 150 metres long by up to
1 metre wide, is hosted along a major northwest-trending fault
structure (Assessment Report 11506).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
	ISOTOPIC AGE: 193.8 +/- 2.6 Ma		
	DATING METHOD: Argon/Argon		
Cretaceous	MATERIAL DATED: Hornblende Sustut	Undefined Formation	

LITHOLOGY: Latite
Andesite
Dacite
Plagioclase Hornblende Microcline Porphyry
Sediment/Sedimentary

HOSTROCK COMMENTS: The age date is the older of two argon-argon ages for the Attycelley
Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 8.9000 Grams per tonne
Gold 0.3000 Grams per tonne

COMMENTS: Sample AA27027, one of two of the better assay results of a total of
eight sample taken in 1983.

REFERENCE: Assessment Report 11506.

CAPSULE GEOLOGY

The Dream showing consists of a zone of quartz veining and
silicified country rocks, over a strike length of 150 metres and a
width of 1 metre (Assessment Report 11506). The showing is located

CAPSULE GEOLOGY

5.6 kilometres southwest of the Lawyers mine (094E 066) and 3.5 kilometres northeast of Lawyers Pass, approximately 290 kilometres north of Smithers. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The Dream showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Dream showing is underlain by a sequence of intermediate volcanic flows and minor volcanoclastic equivalents of the Attycelley Member of the Toodoggone Formation. Compositionally the volcanics are latitic to andesitic or dacitic and porphyritic. Exposures of fresh rock are typically maroon to grey containing plagioclase, hornblende and microcline phenocrysts. The Sustut sediments lie west of the Lawyers Creek and a small cap of these rocks crop out 2 to 3 kilometres southeast of the showing (Assessment Report 11506).

Epithermal-style alteration is common along a northwest-trending fault structure resulting in intense silicification, with or without quartz veining, kaolinite alteration with or without pyrite, or propylitic alteration consisting of carbonate and epidote. The zone is 150 metres long along strike and a few centimetres to about 1 metre wide. The zone is characterized by drusy quartz in vugs, local brecciation and patchy, finely disseminated pyrite. In the immediate vicinity, the rocks are cut by quartz-epidote and epidote veins and fracture coatings of calcite. To the east and northeast, the country rocks are partially silicified and contain minor kaolinite and pyrite (Assessment Report 11506).

A total of eight rock samples were taken from this showing in 1983. Assay results from these samples were weakly to moderately anomalous in silver. Sample AA27019 analysed 0.03 gram per tonne gold and 8.1 grams per tonne silver (Assessment Report 11506). Sample AA27027, taken 75 metres to the southeast from AA27019, analysed 0.3 gram per tonne gold and 8.9 grams per tonne silver

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N MINER October 13, 1986; November 16, 1987
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GCNL #23(Feb.1), #127(July 3), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983; Jan/Feb, 1984
ECON GEOL Vol. 86, pp. 529-554, 1991
V STOCKWATCH June 18, September 4, November 6, 1987
MIN REV September/October, 1982; July/August, 1986

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1096
REPORT: RGEN0100

BIBLIOGRAPHY

WIN Vol. 1, #7, June 1987

DATE CODED: 1992/10/17
DATE REVISED: 1992/10/17

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 192**

NATIONAL MINERAL INVENTORY:

NAME(S): **SURPRISE** JO FRACTION, RJ FRACTION,
WINKLE CHUTE, GEROME,
WANKLE, TINKLE FRACTION, WAS 2,
ANTOINE LOUIS

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 27 29 N
LONGITUDE: 127 16 57 W
ELEVATION: 1680 Metres

NORTHING: 6369678
EASTING: 603043

LOCATION ACCURACY: Within 500M

COMMENTS: The location of sample 86-161 (Assessment Report 15779). The prospect is located in a north-facing cirque, 3.5 kilometres southeast of Tuff Peak and 3.5 kilometres northeast of the Mets prospect (094E 093). Smithers is about 280 kilometres to the south.

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: K-Feldspar Quartz Pyrite Chlorite Magnetite
Epidote Specularite
ALTERATION TYPE: Potassic Chloritic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 300 x 25 Metres STRIKE/DIP: TREND/PLUNGE: 110/
COMMENTS: A potassic alteration zone comprising the Surprise prospect is 300 metres long by up to 25 metres wide and trends 110 degrees (Assessment Report 15779).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 193.8 +/- 2.6 Ma
DATING METHOD: Argon/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Andesite
Dacite
Flow
Feldspar Biotite Hornblende Porphyry
Crystal Tuff
Lapilli Tuff
Tuff Breccia
Welded Tuff

HOSTROCK COMMENTS: The age date is the older of two argon-argon ages for the Attycelley Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 25.2000 Grams per tonne
Gold 2.1000 Grams per tonne
COMMENTS: Sample 86-HA-161, a 5-metre chip sample.
REFERENCE: Assessment Report 15779.

CAPSULE GEOLOGY

The Surprise prospect consists of a zone of quartz stringers with minor pyrite, in a east-facing cirque, located 5.0 kilometres south-southeast of Tuff Peak and 4.0 kilometres east-northeast of the Mets prospect (094E 093) (Assessment Report 15257). Smithers is located 305 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The Surprise prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Surprise prospect is underlain by volcanics of the Attycelley Member of the Toodoggone Formation. At this location they consist of purple and brown feldspar, biotite and hornblende porphyry flows, which are generally massive and appear fresh. Lesser grey to grey-brown crystal tuffs, lapilli tuffs, tuff breccias and rare welded tuffs are also present. They are andesitic to dacitic in composition, generally contain feldspar, biotite and hornblende phenocrysts and appear to be comagmatic with flows (Assessment Report 15779).

A large, roughly circular alteration zone envelopes the Surprise prospect and extends eastward. A concentric alteration pattern has been mapped over an area roughly 2100 metres in diameter and consisting of three alteration types. Propylitic alteration consisting of up to 10 per cent epidote in the matrix, with minor chlorite and rare specularite covers most of the area. Chloritic alteration of the matrix material is also present with minor magnetite, and is confined to an area 600 by 400 metres near the southern boundary of the alteration zone. Potassic alteration consists of pink potassium feldspar and quartz replacement of matrix material with 1 per cent fine-grained, disseminated pyrite and cut by numerous vuggy quartz veinlets. Potassic alteration is accompanied by intense fracturing which influences the orientation and extent of potassic alteration zones (Assessment Report 15779).

One of these potassic alteration zones comprises the Surprise prospect. It is exposed for a strike length of 300 metres and over widths of up to 25 metres, at a trend of 110 degrees. Alteration intensity increases with fracturing, which is oriented predominantly 110 degrees dipping 80 degrees north and 010 degrees dipping 70 degrees west.

Four of fourteen rock samples taken from this zone yielded more than 0.2 gram per tonne gold and more than 12 grams per tonne silver (Assessment Report 15779). Sample 86-HA-161, a chip sample over 5 metres, analysed 2.1 grams per tonne gold and 25.2 grams per tonne silver (Assessment Report 15779).

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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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REPORT: RGEN0100

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DATE CODED: 1992/10/17
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 193**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL (BBX-BINGO)**, HUMP 86 GROUP, AL,
AL 1, AL 3, AL 5-8,
HYUK 1-2 FRACTION, NII FRACTION

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6371215
EASTING: 596304

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 28 24 N
LONGITUDE: 127 23 39 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample PM-84-14C, 2.0 kilometres east of the summit of Alberts Hump, south of Abesti Creek and 1.8 kilometres southwest of the AL (Bonanza) occurrence (094E 079) (Assessment Report 15735).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Hematite
ALTERATION: Silica Hematite Clay Alunite

COMMENTS: Argon/argon age on sericite from the AL (Bonanza) (094E 079) is about 196 Ma; potassium/argon on sericite from the AL (BV) (094E 099) is 152 Ma, and on adularia from Alberts Hump (094E 085) is 190 Ma (Bulletin 86). All are acid-sulphate type epithermal occurrences.

ALTERATION TYPE: Silicific'n Hematite Argillic Alunitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 204 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Trachydacite Ash Flow Tuff
Trachyandesite
Latite
Lapilli Tuff
Argillaceous Limestone
Conglomerate
Trachyandesite Flow
Lahar
Sandstone

HOSTROCK COMMENTS: The age given is the oldest for the Atoogacho Member of the Toodoggone Formation, the dominant host rock of the AL (BBX) (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Spatsizi Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 6.1000 Grams per tonne
Gold 1.3800 Grams per tonne

COMMENTS: Gold value is from sample PM-84-14C and silver value is from sample 86HA58; both from the AL (BBX) zone.

REFERENCE: Assessment Report 15735.

CAPSULE GEOLOGY

The AL (BBX) showing consists of a northwest trending, poorly

CAPSULE GEOLOGY

exposed zone of hematitic silicification and brecciation. The showing is located 2 kilometres east of the summit of Alberts Hump, south of Abesti Creek, and 1.8 kilometres southwest of the AL (Bonanza) occurrence (094E 079) (Assessment Report 15735). Smithers is located 300 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The AL (BBX) showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it.

For a more detailed account of the local geology and alteration refer to the AL (Bonanza) developed prospect (094E 079).

The AL (BBX) showing consists of a poorly-exposed, narrow zone of hematitic silicification and brecciation which parallels the contact between a wide barren dike and extensive alunitic silicification (Assessment Report 15735).

Moderate gold anomalies are reported from the AL (BBX) showing. The best gold assay was from sample PM-84-14C, taken from near the southeastern end of the showing, which was 1.38 grams per tonne gold and 0.6 gram per tonne silver (Assessment Report 15735). Several other samples were moderately anomalous in silver, analysing 4.5 grams per tonne (86HA57) and 6.1 grams per tonne silver (86HA58) (Assessment Report 15735).

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1987-C328-C346; 1988-A16; C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32
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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 1102
REPORT: RGEN0100

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Falconbridge File

DATE CODED: 1992/10/24
DATE REVISED: 1992/10/24

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 194**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL (JK)**, AL 2, AL 4,
BERT, ERNIE, BULL

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 27 57 N
LONGITUDE: 127 21 50 W
ELEVATION: 1540 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6370424
EASTING: 598140

COMMENTS: The approximate location of Trench F. The prospect is located 3.8 kilometres east-southeast of the summit of Alberts Hump and 2.5 kilometres due south of the AL (Bonanza) occurrence (094E 079) (Assessment Report 15735).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrite

ASSOCIATED: Silica

ALTERATION: Silica Pyrite Clay Limonite

COMMENTS: Argon/argon age on sercrite from the AL (Bonanza) (094E 079) is about 196 Ma; potassium/argon on sercrite from the Al (BV) (094E 099) is 152 Ma, and on adularia from the Alberts Hump (094E 085) is 190 Ma (Bulletin 86). All are acid-sulphate type epithermal occurrences.

ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

Pyrite

Argillic

DEPOSIT

CHARACTER: Disseminated

Vein

CLASSIFICATION: Epithermal

Epigenetic

TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 170 x 11

Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: Trenching on the AL (JK) prospect has uncovered a silicified zone, 170 metres long and 11 metres wide (Assessment Report 15735).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 204 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

LITHOLOGY: Siliceous Rock
Trachydacite Ash Flow Tuff
Trachyandesite
Latite
Lapilli Tuff
Argillaceous Limestone
Conglomerate
Trachyandesite Flow
Lahar
Volcanic Sandstone

HOSTROCK COMMENTS: The age given is the oldest for the Addogacho Member of the Toodoggone Formation, the dominant host rock of the AL (JK) (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel

YEAR: 1987

COMMODITY

GRADE

Gold

4.6000

Grams per tonne

COMMENTS: The gold value is a weighted average value using a cut-off grade of 1 gram per tonne. Sample from Trench H.

REFERENCE: Assessment Report 15735.

CAPSULE GEOLOGY

The AL (JK) prospect consists of a northwest trending zone of silicification with pyrite exposed by 7 trenches over about 170 metres. The prospect is located 3.8 kilometres east-southeast of the summit of Alberts Hump, south of Abesti Creek, and 2.5 kilometres due south of the AL (Bonanza) occurrence (094E 079) (Assessment Report 15735). Smithers is located 300 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The AL (JK) prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it.

For a more detailed account of the local geology and alteration refer to the AL (Bonanza) developed prospect (094E 079).

The AL (JK) prospect consists of an undrilled zone of silicification hosting pyrite. This zone has been trenched over a 170-metre strike length and remains open to the south. Up to 11 metres of pyritic silicification with anomalous gold values is flanked by intense argillic alteration. A strong gold soil-geochemical anomaly continues 130 metres to the south (Assessment Report 15735).

Seven of 9 trenches on the AL (JK) prospect uncovered silicification hosting anomalous gold values (Assessment Report 15735). Weighted averages of gold mineralization ranged from 1.36 (Trench D) to 4.60 (Trench H) grams per tonne, using a 1.00 gram per tonne cut-off grade (Assessment Report 15735).

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Columbia, Ph.D. Thesis, University of Western Ontario
Falconbridge File

DATE CODED: 1992/10/24
DATE REVISED: 1992/10/24

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 195**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOUTH HUMP**, HUMP 86 GROUP, AL,
AL 1, AL 3, AL 5-8,
HYUK 1-3 FRACTION, NII FRACTION

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 57 28 12 N
LONGITUDE: 127 24 37 W
ELEVATION: 1610 Metres

NORTHING: 6370821
EASTING: 595346

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample IS-03-84-14F. The prospect is 1.2 kilometres southeast of the summit of Alberts Hump and 750 metres southeast of the Alberts Hump prospect (094E 085) (Assessment Report 15735).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Silica Barite
ALTERATION: Silica Barite Hematite Limonite Alunite
COMMENTS: Argon/argon age on sericite from the AI (Bonanza) (094E 079) is about 196 Ma; potassium/argon on sericite from the AI (BV) (094E 099) is 152 Ma, and on adularia from Alberts Hump (094E 085) is 190 Ma (Bulletin 86). All are acid-sulphate type epithermal occurrences.

Alunitic

ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 350 x 50 Metres
COMMENTS: The largest silicification zone of four comprising the South Hump prospect is 350 metres long by 50 metres wide (Assessment Report 15735).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 204 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Trachydacite Ash Flow Tuff
Trachyandesite
Latite
Lapilli Tuff
Argillaceous Limestone
Conglomerate
Trachyandesite Flow
Lahar
Volcanic Sandstone

HOSTROCK COMMENTS: The age given is the oldest for the Addogacho Member of the Toodoggone Formation, the dominant host rock of the South Hump (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Spatsizi Plateau

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab

YEAR: 1987

COMMODITY	GRADE	
Silver	13.8000	Grams per tonne
Gold	1.4800	Grams per tonne

COMMENTS: Results are from Sample IS-03-84-14F.
 REFERENCE: Assessment Report 15735.

CAPSULE GEOLOGY

The South Hump prospect consists of four well-exposed, northwest trending, parallel bands of silicification which lie within a large zone of weak argillic alteration and base-metal geochemistry. The prospect is located 1.2 kilometres southeast of the summit of Alberts Hump, south of Abesti Creek, and 750 metres southeast of the Alberts Hump prospect (094E 085) (Assessment Report 15735). Smithers is located 300 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The South Hump prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it.

For a more detailed account of the local geology and alteration refer to the AL (Bonanza) developed prospect (094E 079).

The South Hump prospect consists of four, well-exposed, northwest trending, parallel bands of silicification, which lie within a large zone of weak argillic alteration and anomalous base-metal geochemistry. The parallel bands consist of pods and lenses of intense silicification with up to 0.5 per cent porosity, locally pyritic and containing rare barite and/or intense hematite alteration accompanying silicification. These are locally flanked by zones of intense argillic alteration and predominantly weak argillic alteration consisting of limonite alteration of mafic minerals. The most easterly band is flanked on its eastern side by a zone of alunite, hematite and silica alteration (Assessment Report 15735).

The best assay results were from sample IS-03-84-14F, taken from the centre of the largest band of silicification, yielding 1.48 grams per tonne gold and 13.8 grams per tonne silver (Assessment Report 15735). This silicified zone is 350 metres long by 50 metres wide.

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 1987-C328-C346; 1988-A16; C185-C194
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 pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
 291-293; 1985, pp. 167-169, 299; 1987, pp. 111, 114-115; 1989,
 pp. 409-415; 1991, pp. 207-216
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Falconbridge File

DATE CODED: 1992/10/24
DATE REVISED: 1992/10/24

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 196**

NATIONAL MINERAL INVENTORY:

NAME(S): **AL (SADDLE)**, BONANZA 86 GROUP, AL 2,
AL 4, BERT, ERNIE,
BULL

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W

UTM ZONE: 09 (NAD 83)

BC MAP:
LATITUDE: 57 28 21 N
LONGITUDE: 127 21 54 W
ELEVATION: 1620 Metres

NORTHING: 6371164
EASTING: 598055

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Trench 12, across the southern-most of three parallel zones of silicification. The prospect is 3.75 kilometres due east of the summit of Alberts Hump and 800 metres south of the AL (Bonanza) occurrence (094E 079) (Assessment Report 15735).

COMMODITIES: Silver

MINERALS

SIGNIFICANT: Unknown

COMMENTS: Silicification with sulphides is reported but minerals not specified (Assessment Report 15735).

ALTERATION: Silica Clay Chlorite Epidote Carbonate
Hematite

COMMENTS: Argon/argon age on sericite from the Al (Bonanza) (094E 079) is circa 196 Ma; potassium/argon on sericite from the AL (BV) (094E 099) is 152 Ma, and on adularia from Alberts Hump (094E 085) is 190 Ma (Bulletin 86). All are acid-sulphate type epithermal occurrences.

ALTERATION TYPE: Silicific'n Argillic Propylitic Hematite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Irregular

DIMENSION: 60 x 30 Metres STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: The Al (Saddle) prospect consists of three parallel silicified zones. The largest of these (the southernmost) is roughly 60 metres long by up to 30 metres wide and lensoid in shape (Assessment Report 15735).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 204 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Trachydacite Ash Flow Tuff
Trachyandesite
Latite
Lapilli Tuff
Argillaceous Limestone
Conglomerate
Trachyandesite Flow
Lahar
Volcanic Sandstone

HOSTROCK COMMENTS: The age given is the oldest for the Adoogacho Member of the Toodoggone Formation, the dominant host rock of the Al (Saddle) (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Spatsizi Plateau

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the west-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel

YEAR: 1987

COMMODITY

GRADE

Silver

31.5000

Grams per tonne

COMMENTS: Sample 86BK094, one of nine samples taken from Trench 12 on the AL (Saddle) prospect.

REFERENCE: Assessment Report 15735.

CAPSULE GEOLOGY

The AL (Saddle) prospect consists of three northeast trending, parallel bands of silicification, highly anomalous in silver. The prospect is located 3.75 kilometres due east of the summit of Alberts Hump, south of Abesti Creek, and 800 metres due south of the AL (Bonanza) occurrence (094E 079) (Assessment Report 15735). It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp. Smithers is located 300 kilometres to the south.

The AL (Saddle) prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Adoogacho and Metsantan members of the Toodoggone Formation underlie the AL property. The Adoogacho Member consists of trachydacite ash-flow tuff with lenses of lapilli tuff, rare marlstone and conglomerate near the base. The Metsantan Member is composed mainly of trachyandesite (latite) flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). The Metsantan Member, in part, directly overlies the basal Adoogacho Member and is also in fault contact with it.

For a more detailed account of the local geology and alteration refer to the AL (Bonanza) developed prospect (094E 079). bands consist of a core of silicification with or without sulphides and locally lesser argillic alteration. These silica cores are typically flanked or enveloped by zones of weak argillic, propylitic and hematitic alteration or argillic alteration only (Assessment Report 15735). The southernmost band, the largest, has a lensoid shape and is roughly 60 metres long by 30 metres wide.

The best assay results were from Trench 12, across the southernmost of band. Of nine samples taken across this trench, seven samples yielded 7.0 grams per tonne silver or greater, and four samples yielded greater than 20.0 grams per tonne (Assessment Report 15735). The highest silver assay value came from sample 86BK082 and was 174.0 grams per tonne (Assessment Report 15735). Sample 86BK094 analysed 31.5 grams per tonne silver (Assessment Report 15735).

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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1111
REPORT: RGEN0100

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N MINER October 13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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Falconbridge File

DATE CODED: 1992/10/24
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 197**

NATIONAL MINERAL INVENTORY:

NAME(S): **BORDER**, METSANTAN 1-9, METS,
METS 1-2, NORTH, BT,
CAMP

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6366113
EASTING: 601497

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06W
BC MAP:
LATITUDE: 57 25 35 N
LONGITUDE: 127 18 35 W
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location of Trench L-82-1 and 3 on the North zone, 5.6 kilometres east from Metsantán Lake, 1.8 kilometres southeast of the METS occurrence (094E 093), and 750 metres north-northeast of the Metsantán prospect (094E 064) (Assessment Report 14412).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Unknown
COMMENTS: Mineralogy of the nearby Metsantán prospect includes galena, sphalerite, chalcopyrite and pyrite (Bulletin 86).
ASSOCIATED: Quartz Barite
ALTERATION: Silica Clay
COMMENTS: The Metsantán (094E 064) and the Mets (094E 093) occurrences are both epithermal (Bulletin 86). The age of mineralization at the Metsantán is Middle Jurassic (Bulletin 86).
ALTERATION TYPE: Silicific'n Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Trachyte Flow
Trachyte Tuff
Trachyandesite Flow
Trachyandesite Tuff
Trachyandesite Porphyry
Quartz Porphyritic Andesite
Siltstone
Volcanic Sandstone

HOSTROCK COMMENTS: The age given is the oldest age of the Metsantán Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Located in the west-central part of the Toodoggone gold camp.

PHYSIOGRAPHIC AREA: Spatsizi Plateau
GRADE: Greenschist Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab
COMMODITY
Silver 593.1500 Grams per tonne
Gold 37.0300 Grams per tonne
COMMENTS: Sample T-85-2.
REFERENCE: Assessment Report 14412.

CAPSULE GEOLOGY

The Border prospect consists of three zones; the North zone, the BT zone and Camp zone; a series of subparallel quartz-barite veins and breccias. The prospect is located 5.6 kilometres east from Metsantan Lake, 1.8 kilometres southeast of the METS occurrence (094E 093), and 750 metres north-northeast of the Metsantan prospect (094E 064) (Assessment Report 14412). Smithers is located 300 kilometres to the south. It lies within the Omineca-Cassiar mountains in the west-central portion of the Toodoggone gold camp.

The Border prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Border prospect is underlain by northwest trending volcanic units of the Metsantan Member, and crosscut by major and minor fault systems. The main northwest fault is possibly correlative with the Cliff Creek structure at the Lawyers mine (094E 066), 14 kilometres to the southeast. A ring and radial fracture system converges on nearby Metsantan Mountain peak. The oldest unit of the Metsantan Member is composed of trachyte and trachyandesite flows and tuff. Within this unit is a distinctive quartz-eye andesite characterized by a pink aphanitic groundmass and clear quartz phenocrysts. Minor ferruginous siltstone and volcanic sandstone also occur within this unit (Assessment Report 14498).

The North zone, composed of quartz-barite veins, was investigated in 1985 by four trenches (T-85-1 to T-85-4). These veins form a zone traceable on surface by clay alteration and resistant quartz fragments. Trench T-85-1 exposed a 2-metre wide quartz vein. Other trenches intersected clay-rich zones with quartz fragments.

The best of two chip samples taken from trench T-85-1 analysed 0.212 gram per tonne gold and 10.97 grams per tonne silver over 1 metre (Assessment Report 14412). Trench T-85-3 analysed 0.918 gram per tonne gold and 11.66 grams per tonne silver over 1 metre (Assessment Report 14412). A narrow quartz vein, 6 metres east of trench T-85-2, was sampled and yielded 37.03 grams per tonne gold and 593.15 grams per tonne silver (Assessment Report 14412).

The BT zone lies 350 metres west of the North zone. Property work on this zone has consisted of trenching and drilling in 1987 and 1988, but little information could be found. Trench T-87-C from this zone was sampled and assay results were 20.57 grams per tonne gold (Assessment Report 20400). Two rock samples taken from this zone also yielded anomalous gold and silver. Sample RKN-10 analysed 0.348 gram per tonne gold and 35 grams per tonne silver. Sample RKN-11 analysed 1.6 grams per tonne gold and 11.9 grams per tonne silver (Assessment Report 20400). Results from drillholes 88-3 to 6 were not available.

No information is available for the Camp zone (Assessment Report 20400).

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
W MINER April, 1982
N MINER Sept.15, Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #73(April 16),#165(Aug.27), 1986
IPDM Nov/Dec 1983
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/07/24
DATE REVISED: 1992/11/07

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 198**

NATIONAL MINERAL INVENTORY:

NAME(S): **GORD DAVIES (WEST)**, HAR, HAR 1-6,
GORD DAVIES

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 31 26 N
LONGITUDE: 127 13 03 W
ELEVATION: 1700 Metres

NORTHING: 6377106
EASTING: 606750

LOCATION ACCURACY: Within 500M

COMMENTS: The approximate location of sample GD-88-002, sampled across a 20 to 100 centimetre siliceous zone (Assessment Reports 18335). The showing is located 4.25 kilometres southwest of Breccia Peak, west of Moosehorn Creek and south of Hiamadam Creek.

COMMODITIES: Zinc Lead Gold Silver

MINERALS

SIGNIFICANT: Galena
ASSOCIATED: Quartz Carbonate Barite
ALTERATION: Chlorite Carbonate Sericite Clay
ALTERATION TYPE: Propylitic Sericitic Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 3 x 1 Metres STRIKE/DIP: 035/90 TREND/PLUNGE:
COMMENTS: The siliceous zone is exposed for 3.0 metres along strike and varies from 30 to 100 centimetres wide. It strikes 035 degrees and dips near vertically (Assessment Report 18335).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Porphyritic Flow
Flow Breccia
Crystal Tuff
Crystal Lithic Breccia
Volcaniclastic Sediment/Sedimentary
Monzodiorite Dike

HOSTROCK COMMENTS: The age of the McClair Member is between 197 +/- 7 Ma (youngest age of the Metsantan) and 193.8 +/- 2.6 Ma (oldest of the Attycelley Member).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite
COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1988
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Silver		5.1400	Grams per tonne
Gold		0.1370	Grams per tonne
Lead		1.3000	Per cent
Zinc		1.7500	Per cent

COMMENTS: Sample GD-88-002.
REFERENCE: Assessment Report 18335.

CAPSULE GEOLOGY

The Gord Davies (West) showing consists of a 20 to 100 centimetre wide siliceous zone, exposed over a strike length of 3.0 metres (Assessment Report 18335). The showing is located 6.25 kilometres southwest of Breccia Peak, west of Moosehorn Creek and south of Hiamadam Creek in the north-central part of the Toodoggone

CAPSULE GEOLOGY

gold camp. Smithers is located 310 kilometres to the south.

The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Gord Davies (West) showing is underlain by volcanics of the McClair Member of the Toadoggone volcanics. At this location they are composed of interbedded porphyritic flows, flow breccias, crystal tuffs and crystal lithic breccias. Minor volcanoclastic sediments are also present. Intensely fractured, porphyritic monzodiorite dikes cut the above.

These lithologies show generally weak chlorite and carbonate alteration. Feldspar matrix and phenocrysts are weakly affected by sericitic and argillic alteration. Takla volcanics outcrop immediately to the east.

The showing consists of a 20 to 100-centimetre wide siliceous zone, exposed over a strike length of 3.0 metres. The zone strikes 035 degrees and dips near vertically. Cubic galena was observed (Assessment Report 18335). Sample GD-88-002, taken from this zone, analysed 5.14 grams per tonne silver, 0.137 gram per tonne gold, 1.30 per cent lead and 1.75 per cent zinc (Assessment Report 18335).

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GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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DATE CODED: 1985/07/24
DATE REVISED: 1992/11/09

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 199**

NATIONAL MINERAL INVENTORY:

NAME(S): **GORD DAVIES (EAST)**, GORD DAVIES, HAR,
HAR 1-6

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 31 36 N
LONGITUDE: 127 11 05 W
ELEVATION: 1960 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6377467
EASTING: 608704

LOCATION ACCURACY: Within 500M

COMMENTS: The approximate location of two samples (GD-86-3025,3026) (Assessment Report 18335). The prospect is located 2.35 kilometres southwest of Breccia Peak, west of Moosehorn Creek and south of Hiamadam Creek.

COMMODITIES: Gold Silver Lead

MINERALS

SIGNIFICANT: Galena Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Chlorite Carbonate Epidote
ALTERATION TYPE: Propylitic Sericitic Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
COMMENTS: The quartz-carbonate vein is 20 centimetres thick (Assessment Report 15474).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Volcanic Flow
Pyroclastic Crystal Tuff
Crystal Lithic Tuff Breccia
Porphyritic Flow
Flow Breccia
Crystal Tuff
Crystal Lithic Breccia
Volcaniclastic Sediment/Sedimentary
Monzodiorite Dike

HOSTROCK COMMENTS: The McClair Member is between 197 +/- 7 Ma (youngest age of the Met-santan Member) and 193.8 +/- 2.6 Ma (oldest of the Attycelley Member).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Greenschist Zeolite

COMMENTS: Located in the north-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 19.5000 Grams per tonne
Gold 1.0500 Grams per tonne
COMMENTS: Sample GD-86-3025, taken from a quartz-carbonate stockwork with galena and pyrite.
REFERENCE: Assessment Report 15474.

CAPSULE GEOLOGY

The Gord Davies (East) showing consists of two samples taken 50 metres apart, of a quartz-carbonate vein, and stockwork with galena and pyrite (Assessment Report 18335). The showing is located 2.35 kilometres southwest of Breccia Peak, west of Moosehorn Creek and south of Hiamadam Creek in the north-central part of the Toodoggone gold camp. Smithers is located 310 kilometres to the south.

CAPSULE GEOLOGY

The Gord Davies (East) showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Gord Davies (East) showing is underlain by volcanics of the Takla Group. At this location they are composed of volcanic flows, pyroclastic crystal tuffs, crystal lithic tuff breccias and volcanoclastic sediments. These volcanic rocks have undergone weak to moderate chlorite, carbonate and epidote alteration (Assessment Report 18454).

Volcanics of the McClair Member of the Toodoggone volcanics outcrop immediately to the west. They are composed of interbedded porphyritic flows, flow breccias, crystal tuffs and crystal lithic breccias. Minor volcanoclastic sediments are also present. Intensely fractured, porphyritic monzodiorite dikes cut the above.

These lithologies show generally weak chlorite and carbonate alteration. Feldspar matrix and phenocrysts are weakly affected by sericitic and argillic alteration.

The Gord Davies (East) showing consists of a quartz-carbonate stockwork with galena and pyrite, and a quartz-carbonate vein, about 20 centimetres thick. The two are roughly 50 metres apart along a ridge top. Sample GD-86-3025 was taken from the quartz-carbonate stockwork and assayed 1.05 grams per tonne gold and 19.5 grams per tonne silver. Sample GD-86-3026, taken from the quartz-carbonate vein assayed 0.253 gram per tonne gold and 70.0 grams per tonne silver (Assessment Report 15474).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 299-300; 1986, pp. 167-174; 1987, pp. 111,
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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1119
REPORT: RGEN0100

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DATE CODED: 1985/07/24
DATE REVISED: 1992/11/09

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 200**

NATIONAL MINERAL INVENTORY:

NAME(S): ~~REEF~~, JK, JK 1-5,
JOCK, JOCK 1-5, PIL SOUTH,
PIL

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6348989
EASTING: 624517

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:
LATITUDE: 57 16 01 N
LONGITUDE: 126 56 07 W
ELEVATION: 1660 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location of drillholes JK88-01 and 02. The prospect is located 4.6 kilometres southwest of The Pillar and south of Jock Creek (Assessment Report 18632).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite
COMMENTS: Trace base metals are also reported (Assessment Report 18632).
ASSOCIATED: Quartz
ALTERATION: Silica Sericite Limonite Chlorite Calcite
Pyrite Clay
COMMENTS: An argon/argon age on adularia from the Shasta occurrence (094E 050) returned an age of 186.7 +/- 1.7 Ma (Bulletin 86).
ALTERATION TYPE: Silicific'n Argillic Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epithermal Epigenetic
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 100 x 50 x 25 Metres STRIKE/DIP: 060/50E TREND/PLUNGE:
COMMENTS: Silicified zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 200 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			

LITHOLOGY: Dacitic Feldspar Phyric Tuff
Dacite
Andesitic Feldspar Phyric Tuff
Andesite
Lapilli Tuff
Trachyte Pyroclastic
Trachyte
Trachyandesite Pyroclastic
Trachyandesite
Feldspar Porphyry

HOSTROCK COMMENTS: The age given is the oldest age of the host Metsantan Member. The Saunders Member is 192.9 +/- 2.7 Ma (Fieldwork 1985,1991).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the south-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1988

COMMODITY	GRADE	
Silver	2.0000	Grams per tonne
Gold	0.7800	Grams per tonne

COMMENTS: Grades are over a 2.0 metre interval, from drill hole JK 88-01.
REFERENCE: Assessment Report 18632.

CAPSULE GEOLOGY

The Reef prospect is located 4.6 kilometres southwest of the Pillar and south of Jock Creek (Assessment Report 18632). Smithers is about 280 kilometres to the south.

The Reef prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusives bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Reef prospect is underlain by trachyte and trachyandesite pyroclastic rocks including grey, green and maroon dacitic to andesitic feldspar phyric tuffs, lapilli tuffs and agglomerates, and flows. The stratigraphy generally strikes northeast and dips moderately to the northwest. The area in the vicinity of the drilling seems to be underlain by feldspar phyric lapilli tuff, which varies texturally from a crowded feldspar porphyry with few lapilli to lapilli-rich crystal poor intervals. These lithologies are assigned regionally to the Metsantan and Saunders members of the Toadoggonne Formation. The Metsantan Member volcanics are host to the Reef prospect.

One of several prominent, narrow mineralized zones of silicified rock with strong associated argillic alteration in the area comprises the Reef prospect. The silicified rock forms a resistant tabular structure where it outcrops on surface. The structure is 5 to 15 metres wide and 50 metres long, striking 060 degrees and dipping 50 degrees to the southeast. Drillhole JK88-01 intersected a true thickness of roughly 25 metres and is structurally continuous for at least 100 metres down dip. A major hangingwall fault observed on surface is also observed to 100 metres depth.

Three types of alteration are observed; silicic, argillic, and propylitic. Narrow zones of silicic alteration are characterized by strong to intense quartz flooding and moderate sericite. Wider zones of argillic alteration are defined by extensive quartz, sericite, and clay alteration. Surface outcrop of the Reef prospect is strongly altered to limonite. Sulphides and phenocrysts have been mostly leached out resulting in vuggy textures. Boxworks indicate an originally high pyrite content. Propylitic alteration consists of chlorite, calcite and varying amounts of quartz and pyrite. Geology and geochemistry of the mineralized zones are compatible with the formation in an acid-sulphate type epithermal system.

Mineralization at the Reef prospect consists of local pyrite and trace base metals. The best intersection from drill core (drillhole JK88-01) was 0.78 gram per tonne gold and 2.0 grams per tonne silver over 2.0 metres or 0.49 gram per tonne gold and 1.5 grams per tonne silver over 6.0 metres (Assessment Report 18632). These results were from the footwall of the Reef structure. Surface lithogeochemical samples analysed up to 1.95 grams per tonne gold and silver values of 1 to 2 grams per tonne over 1 metre widths (Assessment Report 18632).

In 1999 and 2000, Finlay Minerals Ltd. conducted grid work, induced polarization and magnetometer surveys, detailed geological mapping, soil and rock sampling, and hand trenching.

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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DATE CODED: 1992/11/13
DATE REVISED: 1992/11/13

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 201**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAUL**, ARGUS 2, ADRIAN,
OTTO, IAN, ARGUS,
ARGUS 1-2, ARG 1-4, OJ,
OJ 1-4, PIL NORTH, PIL

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 20 25 N
LONGITUDE: 126 56 44 W
ELEVATION: 1880 Metres

NORTHING: 6357132
EASTING: 623651

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Trench 5. The showing is located 7.0 kilometres due south of Toadoggone Lake, north of Jock Creek, and 10.0 kilometres north-northeast of the Shasta occurrence (094E 050) (Assessment Report 17061).

COMMODITIES: Gold Silver Lead Copper

MINERALS

SIGNIFICANT: Pyrite Galena Malachite
ASSOCIATED: Quartz Feldspar Carbonate
ALTERATION: Quartz Chlorite Epidote Carbonate Pyrite
Clay Malachite
ALTERATION TYPE: Propylitic Argillic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Hazelton	Unnamed/Unknown Formation	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Feldspar Porphyritic Flow
Crystal Lapilli Tuff
Pyroclastic Breccia
Lahar
Volcanic Sandstone
Mudstone
Conglomerate
Greywacke

HOSTROCK COMMENTS: The McClair stock of the Black Lake Suite is Early to Middle Jurassic (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the central part of the Toadoggone gold camp.

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Channel
COMMODITY: Silver GRADE: 2.1000 Grams per tonne
COMMENTS: Sample AR022, a 2-metre channel sample from Trench 5. Lead was not analysed.
REFERENCE: Assessment Report 15264.

CAPSULE GEOLOGY

The Paul showing is located 7 kilometres due south of Toadoggone Lake, north of Jock Creek, and 10 kilometres north-northeast of the Shasta occurrence (094E 050) (Assessment Report 17061). The showing is located in the central part of the Toadoggone gold camp, approximately 290 kilometres north of Smithers.

CAPSULE GEOLOGY

The Paul showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Geological mapping in the Paul showing area, shows the area to be underlain by both undivided rocks of the Jurassic Hazelton Group and the Toodoggone Formation of the Hazelton Group. Feldspar porphyritic flows, crystal lapilli tuffs, pyroclastic breccia, lahar and volcanically derived conglomerate, mudstone and greywacke comprise lithologies of the Hazelton group. They are generally found in fault contact with the Metsantan Member of the Toodoggone Formation and crop out east of the fault. The Metsantan Member, described regionally as consisting of trachyandesite flows with lenses of lapilli tuff, lahar; minor volcanic sandstone and conglomerate, occurs west of the fault (Bulletin 86). Within the Paul showing area a stock, part of the Black Lake Suite, occurs along the fault contact separating the two volcanic sequences and is composed of syenite to quartz monzonite and granodiorite to quartz diorite. This northwest trending, lens-shaped, stock is informally recognized as the McClair stock (Assessment Report 15264). Late mafic dikes cut the entire sequence.

The Paul showing area is dominated by a northwesterly trending set of structures represented by younger steeply dipping faults and syn-volcanic half-graben margins exhibited in Hazelton Group volcanics. Younger northwest-trending, post volcanic and intrusive faults also transect the area. Most of the prominent gossans in the area are also aligned along this trend.

There are numerous gossans in the Paul showing area. They are marked by an extensive zone of disseminated pyrite and intense propylitic alteration (chlorite and epidote). Argillic alteration, consisting of clays, occurs along faults. Locally silicification, consisting of blue-white silica with disseminated pyrite, is found. Minor amounts of galena and malachite staining have also been found.

Three trenches were dug in the vicinity of the reported galena. Assay results from these trenches were poor overall. Trench 5 yielded 2.1 grams per tonne silver, from a 2-metre channel sample (Assessment Report 15264). Sample material consisted of quartz, feldspar and carbonate rock fragments in yellow/white clay. A nearby grab rock sample analysed 3.4 grams per tonne silver (Assessment Report 15264). In 1981, rock sample SC-28-80-16 taken 400 metres south of Trench 5 assayed 3.8 grams per tonne silver and 0.31 gram per tonne gold (Assessment Report 9001). The sample consisted of banded quartz in a volcanic host.

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GSC OF 306; 483

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DATE CODED: 1985/09/13
DATE REVISED: 1992/11/19

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 202**

NATIONAL MINERAL INVENTORY:

NAME(S): **IAN, PAUL, ADRIAN**
OTTO, ARGUS, ARGUS 1-2,
ARG 1-4, OJ, OJ 1-4,
GO, NE, RI

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 19 41 N
LONGITUDE: 126 59 34 W
ELEVATION: 1830 Metres

NORTHING: 6355687
EASTING: 620849

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample RYO 106032 carrying anomalous silver. The Ian showing is located 8.75 kilometres south-southwest of Toodoggone Lake, north of Jock Creek, and 8.25 kilometres north of the Shasta occurrence (094E 050) (Assessment Report 17061).

COMMODITIES: Silver Gold Lead Copper

MINERALS

SIGNIFICANT: Galena Malachite
COMMENTS: Minor galena is reported.

ASSOCIATED: Quartz Barite

COMMENTS: Barite is reported nearby (Assessment Report 15264).

ALTERATION: Silica Pyrite Clay Chlorite Epidote

Malachite

COMMENTS: Argillic alteration with quartz and a quartz silica cap with argillic alteration are reported nearby (Assessment Report 15264).

ALTERATION TYPE: Argillic Silicific'n Propylitic Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER

Lower Jurassic

Hazelton

Toodoggone

ISOTOPIC AGE: 200 +/- 7 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Biotite

Lower Jurassic

Black Lake Suite

LITHOLOGY: Trachyandesite Flow
Lapilli Tuff
Lahar
Volcanic Sandstone
Conglomerate
Syenite
Quartz Monzonite
Granodiorite
Quartz Diorite

HOSTROCK COMMENTS: The McClair stock of the Black Lake Suite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1987

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

66.0000

Grams per tonne

Gold

0.2550

Grams per tonne

COMMENTS: Sample RYO 106032.

REFERENCE: Assessment Report 17061.

CAPSULE GEOLOGY

The Ian showing is located 8.75 kilometres south-southwest of Toodoggone Lake, north of Jock Creek, and 8.25 kilometres north of the Shasta occurrence (094E 050) (Assessment Report 17061). The showing is located in the central part of the Toodoggone gold camp, approximately 290 kilometres north of Smithers.

The Ian showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Geological mapping in the Ian showing area, shows the area to be underlain by both undivided rocks of the Jurassic Hazelton Group and the Toodoggone Formation of the Hazelton Group. Feldspar porphyritic flows, crystal lapilli tuffs, pyroclastic breccia, lahar and volcanically derived conglomerate, mudstone and greywacke comprise lithologies of the Hazelton group. They are generally found in fault contact with the Metsantan Member of the Toodoggone Formation and crop out east of the fault. The Metsantan Member, described regionally as consisting of trachyandesite flows with lenses of lapilli tuff, lahar; minor volcanic sandstone and conglomerate, occurs west of the fault (Bulletin 86). Within the Ian showing area a stock, part of the Black Lake Suite, occurs along the fault contact separating the two volcanic sequences and is composed of syenite to quartz monzonite and granodiorite to quartz diorite. This northwest trending, lens-shaped, stock is informally recognized as the McClair stock (Assessment Report 15264). Late mafic dikes cut the entire sequence.

The Ian showing area is dominated by a northwesterly trending set of structures represented by younger steeply dipping faults and syn-volcanic half-graben margins exhibited in Hazelton Group volcanics. Younger northwest-trending, post volcanic and intrusive faults also transect the area. Most of the prominent gossans in the area are also aligned along this trend.

There are numerous gossans in the Ian showing area. They are marked by an extensive zone of disseminated pyrite and intense propylitic alteration (chlorite and epidote). Argillic alteration, consisting of clays, occurs along faults. Locally silicification, consisting of blue-white silica with disseminated pyrite is found. Minor amounts of galena and malachite staining have also been found.

A grab sample was taken during property exploration in 1986. Assay results from this sample (RYO 106032) were 66.0 grams per tonne silver and 0.255 gram per tonne gold (Assessment Report 17061). No visible mineralization is reported from this sample, which was taken along a west-northwest trending fault within the Metsantan Member of the Toodoggone Formation, occurring near a large gossan on the west side of the McClair stock. Argillic alteration with quartz, a quartz silica cap and barite are reported nearby (Assessment Report 15264).

Trenching and sampling has been conducted on a ridge, 1 kilometre east of sample RYO 106032. Sample SC-41-80-7, consisting of quartz vein material hosted in an intrusive rock, analysed 4.6 grams per tonne silver and 0.56 per cent copper (Assessment Report 9001). In 1985, two trenches were dug about 500 metres south of sample SC-41-80-7. Trenching intersected clay-rich, bleached and altered rock. Four of five samples from Trench 2 yielded silver assay values ranging from 1.5 to 1.8 grams per tonne (Assessment Report 15264).

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N MINER Oct.13, 1986
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DATE CODED: 1985/09/13
DATE REVISED: 1992/11/19

CODED BY: TGS
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 203**

NATIONAL MINERAL INVENTORY:

NAME(S): **YELLOW ROSE** MOUNT GRAVES, GRAVES,
GRAVES 1, ORANGE ROSE, GRAVES 1-2

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 22 26 N
LONGITUDE: 126 58 28 W
ELEVATION: 1910 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6360820
EASTING: 621801

COMMENTS: The location of Trench 1 (1987) on the Graves 1 claim. The prospect is 750 metres south-southeast of Mount Graves proper and 600 metres south of the Mount Graves prospect (094E 087). Smithers is 290 kilometres to the south.

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite
ASSOCIATED: Quartz Barite Chalcedony Calcite Siderite
Amethyst Hematite
ALTERATION: Silica Quartz Pyrite Clay Jarosite
Carbonate Chlorite Epidote

COMMENTS: Hematite, magnetite, sericite, pyrite, carbonate and iron and manganese oxides (form the weathering of pyrite) are also present.

ALTERATION TYPE: Silicific'n Argillic Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular

DIMENSION: 17 Metres STRIKE/DIP: TREND/PLUNGE:

COMMENTS: Trenching over some 55 metres has exposed mineralization at the Yellow Rose prospect in a coarse stockwork of veins over a minimum width of 17 metres (Assessment Report 17326).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Andesitic Ash Flow Tuff
Andesite
Homblende Porphyry Andesite Flow
Pyroxene Andesite Flow
Welded Andesite Breccia
Greywacke
Siltstone
Quartz Monzonite Dike
Quartz Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1986
SAMPLE TYPE: Channel	
COMMODITY	GRADE
Silver	6.5100 Grams per tonne
Gold	10.4900 Grams per tonne

COMMENTS: Gold value is from Sample 36257 and silver value is from Sample 36288.
REFERENCE: Assessment Report 14824.

CAPSULE GEOLOGY

The Yellow Rose prospect is located on the Graves 1 claim, 750 metres south-southeast of Mount Graves proper and 600 metres south of the Mount Graves prospect (094E 087). Smithers is 290 kilometres to the south.

A description of the regional geological setting of the Yellow Rose prospect is given in the Mount Graves prospect (094E 087).

Volcanics and volcanoclastics of the Jurassic Hazelton Group are hostrocks of the Mount Graves prospect and surrounding area. These rocks form the eastern limb of a north-northwest trending faulted anticline. Regionally, these rocks have been subdivided into four informal units (Forster, 1984), which at the Mount Graves prospect, dip 50 to 80 degrees to the northeast. Welded and partially welded andesite pumice breccia, overlain by grey, green to orange hornblende porphyritic andesitic flows and pyroxene andesite flows; lesser thin discontinuous lenses of greywacke and laminated siltstone comprise lithologies of the Hazelton Group. Quartz monzonite dikes are found in the faulted core of the regional anticline and along northeast and east trending faults. A series of quartz-feldspar porphyry rhyolitic dikes, striking northwesterly and dipping steeply, occur subparallel to bedding.

Propylitic alteration is pervasive in all units (Forster, 1984). Mafic phenocrysts are altered to chlorite and epidote with hematite and magnetite inclusions or rims. Plagioclase crystals are replaced or rimmed with epidote, chlorite and carbonate. Groundmass is altered to epidote, chlorite, carbonate, sericite and pyrite. Silicification varies from hairline fractures of quartz and calcite to complete quartz flooding along faults and fractures. Pyrite is commonly associated with quartz veining. Weathering products of pyrite include iron oxides, jarosite and manganese oxides along fault and fracture zones. Stockwork and breccia zones consist of quartz, amethystine, chalcedony, calcite, siderite, hematite and barite.

The Yellow Rose prospect lies along the southeastern end of the Yellow Rose fault zone, which has an exposed strike length of some 2 kilometres. The fault zone is described as a lens-like anastomosing fracture system. This is one of the most persistent structures in the Mount Graves area. It strikes northwest and is inclined steeply to the southwest. At its northwest end, the fault pinches to less than 10 metres wide and is associated with only scattered quartz and calcite veins. On the Yellow Rose prospect (and Orange Rose showing), the fault zone is over 30 metres wide with associated argillic (clays and jarosite) and lesser quartz-pyrite alteration. This is enveloped by a broader zone of propylitic alteration; the iron-carbonates weathering a rusty brown.

At the Yellow Rose prospect, mineralization consists of a coarse stockwork of quartz veining containing galena, sphalerite, chalcopryrite and barite. The veins are hosted in an andesitic, agglomeratic ash flow tuff. The mineralized zone has been exposed over a minimum width of 17 metres.

Trench 1 on the Yellow Rose prospect, has exposed sparse, thin and largely barren, clear quartz veining. Veining cuts broken, clay-altered andesite on the exposed hangingwall. An additional 5-metre length of shattered, increasingly clay-altered andesite was exposed further into the fault zone, to the northeast. Thin, sparse quartz veining with little or no sulphides persists in this new trench extension.

In 1985, trenching on the Yellow Rose prospect intersected gold mineralization in thin quartz veining. The best gold assay results were from sample 36257 which analysed 10.49 grams per tonne gold and 1.7 grams per tonne silver over 5 centimetres (Assessment Report 14824). Samples 36288 and 36289 analysed 6.51 and 6.17 grams per tonne gold respectively (Assessment Report 14824). In 1987, 6 channel samples were taken from a 25-metre extension of Trench 1, in and adjacent to thin quartz veining. The highest assay values from these samples were 0.96 gram per tonne gold, 0.6 gram per tonne silver, 0.36 per cent lead and 0.49 per cent zinc (Assessment Report 17326).

The Orange Rose showing (also on the Graves 1 claim) is located over 500 metres to the northwest of the Yellow Rose prospect. The showing lies along the northwestern end of the Yellow Rose fault zones. Trench 2 on this showing has exposed lenses of moderately to heavily silicified andesite porphyry across roughly 20 metres width, varying from a few centimetres to 2 metres thick with up to 5 per cent disseminated pyrite.

In 1986, trenching on the Orange Rose showing intersected strong silicification with disseminated pyrite as the only visible mineralization. The best assay results from this trench were 0.02 gram per tonne gold over 200 centimetres (Sample L-311) and 2.9 grams per tonne silver over 10 centimetres (Sample L-314) (Assessment Report 17326).

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W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
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MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
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Mineralization, Toodoggone River Area, North-Central British
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/11/20
DATE REVISED: 1993/05/03

CODED BY: KJM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 204**

NATIONAL MINERAL INVENTORY: 094E14 Cu1

NAME(S): **WEST 8**, WEST, WEST 1-23

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E14W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 55 54 N
LONGITUDE: 127 26 26 W
ELEVATION: 1800 Metres

NORTHING: 6422168
EASTING: 592348

LOCATION ACCURACY: Within 500M

COMMENTS: The location of a skarn zone located 2.0 kilometres west of Lunar Creek and roughly 24 kilometres north of the confluence of Lunar Creek with Geese Creek, north of the Stikine River.

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
COMMENTS: See structural comment.
ASSOCIATED: Epidote Garnet
COMMENTS: Epidote-garnet skarn has been mapped.
ALTERATION: Epidote Garnet
COMMENTS: See associated mineral comment.
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Vein Stockwork
CLASSIFICATION: Skarn
TYPE: K02 Pb-Zn skarn
DIMENSION: 9 Metres STRIKE/DIP:
COMMENTS: The skarn zone contains bands well mineralized with chalcopyrite and pyrite over widths up to 9 metres (Assessment Report 3835).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	Unnamed/Unknown Informal
Triassic-Jurassic			

LITHOLOGY: Hornblende Monzonite
Biotite Quartz Monzodiorite
Biotite Quartz Monzonite
Foliated Amphibolite
Plagioclase Actinolite Schist
Amphibolite Wacke
Amphibolite Tuff
Calc-silicate

HOSTROCK COMMENTS: The Triassic (?) Lunar Creek mafic to ultramafic complex lies immediately to the west.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Quesnel
METAMORPHIC TYPE: Regional Contact RELATIONSHIP: PHYSIOGRAPHIC AREA: Cassiar Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Grab
COMMODITY: Copper GRADE: 0.4200 Per cent
COMMENTS: Sampling done across one zone in 1970.
REFERENCE: Assessment Report 3835.

CAPSULE GEOLOGY

The West 8 showing, consisting of a skarn zone containing bands well mineralized with pyrite and chalcopyrite over widths of up to 9 metres, is located 2 kilometres west of Lunar Creek and roughly 24 kilometres north of the confluence of Lunar Creek with Geese Creek, north of the Stikine River. Dease Lake is 135 kilometres to the northwest.

Regionally, the West 8 showing lies on the western edge of the

CAPSULE GEOLOGY

Omineca Belt near the Kutcho fault, marking the boundary with rocks of the Intermontane Belt. The showing is located in a fault bound wedge of Takla Group rocks, along the margin of an unnamed Late Triassic to Early Jurassic granitoid pluton. Takla Group rocks consist of middle greenschist to lower amphibolite grade volcanic, volcanoclastic, and sedimentary rocks; locally subdivided into augite and plagioclase porphyroblastic actinolite schists and amphibole-biotite wacke or tuff, and well foliated amphibolite (Open File 1990-12). At this showing the composition of this pluton is hornblende monzonite and biotite quartz monzonite. To the west lies the Middle Triassic Lunar Creek Complex consisting of ultramafic rock.

The West 8 showing is underlain by two main rock types hosted in an area of complex faulting, resulting in many small fault bound wedges of intrusion and/or well foliated amphibolite of the Takla Group. Hornblende monzonite and biotite-quartz monzonite and monzodiorite comprise intrusive rocks.

Mineralization at the West 8 showing consists of veins and stringers of massive sulphides (mostly pyrite and sparse chalcopyrite) cutting skarn. The skarn consists of well interlayered monzonite, schist and a dense calcsilicate rock consisting of epidote and yellow (andradite) garnet. The best mineralization occurs in bands up to 9 metres wide. Sampling done in 1970 across one zone yielded 0.42 per cent copper over 7.6 metres (Assessment Report 3835).

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76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246; 80-1A, p. 348;
*80-1B, pp. 207-211; 83-1A, pp. 221-227; 84-1A, pp. 105-108
GSC MAP 14-1973
Chevron File

DATE CODED: 1992/12/18
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 205**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRAVY**, GRAVY 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 23 21 N
LONGITUDE: 126 55 55 W
ELEVATION: 1680 Metres

NORTHING: 6362597
EASTING: 624304

LOCATION ACCURACY: Within 500M

COMMENTS: The location of samples MG-87-5, 7 and 8 of quartz breccia. The showing is 1.75 kilometres south of Toodoggone Lake and 2.75 kilometres east-northeast of the Mount Graves prospect (094E 087) (Assessment Report 17226). Smithers is 290 kilometres to the south.

COMMODITIES: Silver Gold Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 20 x 5 Metres STRIKE/DIP: 330/ TREND/PLUNGE:
COMMENTS: The quartz breccia zone comprising the Gravy showing strikes 330 degrees, is exposed for 20 metres length and is 5 metres wide. Quartz veins are up to 20 centimetres wide (Assessment Report 17226).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic Lower Jurassic	Hazelton	Undefined Formation	Black Lake Suite

LITHOLOGY: Diorite
Granodiorite
Andesite Flow
Andesite Pyroclastic
Andesite
Feldspar Porphyry Dike
Feldspar Porphyry Sill
Siliceous Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1987
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Silver		37.5000	Grams per tonne
Gold		0.7800	Grams per tonne
Copper		0.2800	Per cent
Lead		1.3400	Per cent
Zinc		0.7400	Per cent

COMMENTS: Sample MG-87-5.
REFERENCE: Assessment Report 17226.

CAPSULE GEOLOGY

The Gravy showing is 1.75 kilometres south of Toodoggone Lake and 2.75 kilometres east-northeast of the Mount Graves prospect (094E 087) (Assessment Report 17226). Smithers is 290 kilometres to the south.

The Gravy showing is situated within a Mesozoic volcanic arc

CAPSULE GEOLOGY

assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Gravy showing lies within a granodiorite stock of the Omineca intrusions near its contact with undivided volcanics of the Hazelton Group. Hazelton volcanics consist of grey, green and purple andesitic flows and pyroclastics of the Hazelton Group. Bedding strikes northwest and dips moderately to the northeast. Numerous pink feldspar porphyry dikes and sills are associated with the volcanics. Numerous other small granodiorite stocks and plugs crop out in the area.

Abundant disseminated pyrite occurs in contact areas between volcanics and intrusive rocks. These are evident as prominent gossans, some of which also contain quartz veins and/or silica veins and breccias.

At the Gravy showing, quartz breccia hosts galena, sphalerite and chalcopyrite with associated malachite. The zone strikes 330 degrees, is approximately 5 metres wide and exposed for 20 metres along strike. The breccia material is composed of diorite cemented by quartz. The system contains quartz veins up to 12 centimetres wide but the stringers average 1 to 2 centimetres.

Of 5 rock samples collected from the showing, 3 yielded significantly anomalous precious and base metals. Sample MG-87-5 analysed 0.78 gram per tonne gold, 37.5 grams per tonne silver, 0.28 per cent copper, 1.34 per cent lead and 0.74 per cent zinc. Similarly, sample MG-87-7 analysed 0.63 gram per tonne gold, 13.7 grams per tonne silver, 0.41 per cent copper, 2.51 per cent lead and 0.22 per cent zinc (Assessment Report 17226).

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1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 299-300; 1986, pp. 167-174; 1987, pp. 111,
114-115; 1989, pp. 409-415; 1991, pp. 207-216
EMPR BULL 86
EMPR ASS RPT 14436, *17226
EMPR MAP 61 (1985); 65 (1989)
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EMPR GEOLOGY 1977-1981, pp. 156-161
GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
Forster, D.B. (1984): Geology, Petrology and Precious Metal
Mineralization, Toadoggonne River Area, North-Central British
Columbia, Unpub. Ph.D. Thesis, University of British Columbia
Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toadoggonne Formation, Toadoggonne Mining District, British

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1136
REPORT: RGEN0100

BIBLIOGRAPHY

Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/11/20
DATE REVISED: 1992/11/20

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 206**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRAVY (EAST)**, GRAVY 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 23 26 N
LONGITUDE: 126 55 24 W
ELEVATION: 1960 Metres

NORTHING: 6362768
EASTING: 624817

LOCATION ACCURACY: Within 500M

COMMENTS: The location of samples MG-87-3 and 4 of quartz breccia. The showing is 1.75 kilometres south of Toodoggone Lake and 3.25 kilometres east-northeast of the Mount Graves prospect (094E 087) (Assessment Report 17226). Smithers is 290 kilometres to the south.

COMMODITIES: Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite
COMMENTS: Chalcopyrite is minor (Assessment Report 17226).

ASSOCIATED: Quartz

ALTERATION: Silica Malachite

ALTERATION TYPE: Silicific'n Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic

DIMENSION: STRIKE/DIP: 340/

TREND/PLUNGE:

COMMENTS: The quartz breccia zone comprising the Gravy (East) prospect strikes 340 degrees (Assessment Report 17226).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic Lower Jurassic	Hazelton	Undefined Formation	Black Lake Suite

LITHOLOGY: Diorite
Granodiorite
Andesite
Andesite Flow
Andesite Pyroclastic
Feldspar Porphyry Dike
Feldspar Porphyry Sill
Siliceous Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

CAPSULE GEOLOGY

The Gravy (East) showing is 1.75 kilometres south of Toodoggone Lake and 3.25 kilometres east-northeast of the Mount Graves prospect (094E 087) (Assessment Report 17226). Smithers is 290 kilometres to the south.

The Gravy (East) showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply-dipping faults which define a prominent regional northwest structural fabric

CAPSULE GEOLOGY

trending 140 to 170 degrees. In turn, high-angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Gravy (East) showing lies within a granodiorite stock of the Black Lake Suite near its contact with undivided volcanics of the Hazelton Group. Hazelton volcanics consist of grey, green and purple andesitic flow and pyroclastics of the Hazelton Group. Bedding strikes northwest and dips moderately to the northeast. Numerous pink feldspar porphyry dikes and sills are associated with the volcanics. Numerous other small granodiorite stocks and plugs crop out in the area.

Abundant disseminated pyrite occurs in contact areas between volcanics and intrusive rocks. These are evident as prominent gossans, some of which also contain quartz veins and/or silica veins and breccias.

At the Gravy (East) showing quartz breccia hosts galena, sphalerite and minor chalcopyrite with associated malachite. The zone strikes 340 degrees. Quartz occurs as stringers with rusty vugs. Several of the vugs (up to 5 millimetres) display well developed quartz crystals with dogtooth textures. The breccia material is composed of diorite cemented by quartz.

Because the showing lies outside of the Gravy claims there was little sampling done on this quartz breccia system. Of two samples that were taken, assay results were poor. Sample MG-87-3 yielded 0.005 gram per tonne gold and 0.3 gram per tonne silver (Assessment Report 17226).

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EMPR EXPL 1975-E163-E167; 1976-E175-E177; 1977-E216-E217;
1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 299-300; 1986, pp. 167-174; 1987, pp. 111,
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EMPR GEOLOGY 1977-1981, pp. 156-161
GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British
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DATE CODED: 1992/11/20
DATE REVISED: 1992/11/20

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 207**

NATIONAL MINERAL INVENTORY:

NAME(S): **KNIGHT, CHESS GROUP, KEVIN,
BISHOP, CASTLE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 57 22 55 N
LONGITUDE: 126 52 00 W
ELEVATION: 1960 Metres

NORTHING: 6361915
EASTING: 628253

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample 32762, taken from a mineralized quartz vein hosted within a larger gossan. The Knight showing is located 4.25 kilometres southeast of Toodoggone Lake and 6.25 kilometres east of the Mount Graves prospect (094E 087) (Assessment Report 18535).

COMMODITIES: Copper Silver Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena Pyrite
COMMENTS: Galena is minor (Assessment Report 18535).

ASSOCIATED: Quartz Barite
COMMENTS: Barite is minor (Assessment Report 18535).

ALTERATION: Pyrite

ALTERATION TYPE: Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 40 x 2 Metres STRIKE/DIP: 360/

TREND/PLUNGE:

COMMENTS: The veins vary in width from a few centimetres to 2 metres. The surface trace, up to 40 metres, indicates these veins strike north and dip steeply east and west (Assessment Report 18535).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic Lower Jurassic	Hazelton	Undefined Formation	Black Lake Suite

LITHOLOGY: Plagioclase Hornblende Tuff
Plagioclase Hornblende Breccia
Plagioclase Quartz Porphyry
Felsic Tuff
Felsic Breccia
Rhyolite
Syenite
Granodiorite
Quartz Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1988

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver

16.8000

Grams per tonne

Copper

0.5300

Per cent

COMMENTS: Sample 32762.

REFERENCE: Assessment Report 18535.

CAPSULE GEOLOGY

The Knight showing is located 4.25 kilometres southeast of Toodoggone Lake and 6.25 kilometres east of the Mount Graves prospect (094E 087) (Assessment Report 18535). Smithers is 290 kilometres to the south.

CAPSULE GEOLOGY

The Knight prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Knight showing is underlain by regionally undivided Hazelton Group volcanics. On a property scale, four units have been delineated from the volcanic stratigraphy. These consist of light grey to green plagioclase and hornblende plagioclase tuffs and breccias; grey-green, orange and brown, fine to coarse-grained plagioclase porphyry, including minor quartz-eye porphyry; felsic tuffs and breccias; and thin bedded, well cleaved rhyolite. Indications are that this stratigraphy is continuous with the Toodoggone Formation rocks immediately to the west. These rocks have been intruded by three varieties of plutonic rocks: syenite to syenodiorite; granodiorite; and quartz diorite which has been subject to moderate to intense kaolinite and pyrite alteration (up to 40 per cent) and secondary silicification. The silicification is commonly so intense that all primary textures are obliterated. Three major fault systems intersect just east of the Knight showing.

Several quartz veins were found in volcanics on the Knight claim, one of which comprises the Knight showing. The veins vary in width from a few centimetres to 2 metres. The surface trace, up to 40 metres, indicates these veins strike north and dip steeply to the east and west. Some of the veins contain chalcopyrite, minor galena, barite and malachite staining.

In 1988, 8 of 58 rock samples taken from the Knight showing area yielded anomalous results. Quartz veining with barite, galena, malachite and pyrite alteration were noted in the area and are associated with these results. Sample 32762 assayed 16.8 grams per tonne silver and 0.53 per cent copper (Assessment Report 18535). Samples 33239 and 32754, taken 400 metres to the west, yielded 4.8 grams per tonne silver and 5.01 per cent lead, and 0.77 per cent copper respectively (Assessment Report 18535).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 299-300; 1986, pp. 167-174; 1987, pp. 111,
114-115; 1989, pp. 409-415; 1991, pp. 207-216
EMPR BULL 86
EMPR ASS RPT 15599, *18535
EMPR MAP 61 (1985); 65 (1989)
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER July 14; Sept. 29; Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), #185(Sept.25), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987

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RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1141
REPORT: RGEN0100

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Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/11/21
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 208**

NATIONAL MINERAL INVENTORY:

NAME(S): **KEVIN**, CHESS GROUP, KNIGHT,
BISHOP, CASTLE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:
LATITUDE: 57 22 26 N
LONGITUDE: 126 49 35 W
ELEVATION: 1300 Metres

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6361095
EASTING: 630702

LOCATION ACCURACY: Within 500M

COMMENTS: The location of samples JS-86-P2001 and P2002, from a zone of secondary silicification and pyrite alteration (Assessment Report 15599). The showing is located 6.75 kilometres east-southeast of Toodoggone Lake and 8.75 kilometres east of the Mount Graves prospect (094E 087). Smithers is 290 kilometres to the south.

COMMODITIES: Silver

MINERALS

SIGNIFICANT: Pyrite Barite
COMMENTS: Pyrite is 25 to 40 per cent by volume.
ASSOCIATED: Quartz
ALTERATION: Silica Pyrite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Massive
CLASSIFICATION: Hydrothermal Epithermal
DIMENSION: STRIKE/DIP: TREND/PLUNGE: 160/
COMMENTS: Two zones of silicification and pyrite alteration trend between 160 and 175 degrees (Assessment Report 15599).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	Black Lake Suite
Lower Jurassic			

LITHOLOGY: Granodiorite
Syenite
Quartz Diorite
Plagioclase Hornblende Tuff
Plagioclase Hornblende Breccia
Plagioclase Quartz Porphyry
Felsic Tuff
Felsic Breccia
Rhyolite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 10.1000 Grams per tonne
COMMENTS: Sample JS-86-P2002, a one-metre chip sample.
REFERENCE: Assessment Report 15599.

CAPSULE GEOLOGY

The Kevin showing, composed of a zone of silicification and pyrite alteration, is located 6.75 kilometres east-southeast of Toodoggone Lake and 8.75 kilometres east of the Mount Graves prospect (094E 087). Smithers is 290 kilometres to the south.

The Kevin showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane

CAPSULE GEOLOGY

Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply-dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high-angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Kevin showing is underlain by regionally undivided Hazelton Group volcanics. On a property scale, four units have been delineated from the volcanic stratigraphy. These consist of light grey to green plagioclase and hornblende plagioclase tuffs and breccias; grey-green, orange and brown, fine to coarse-grained plagioclase porphyry, including minor quartz-eye porphyry; felsic tuffs and breccias; and thin bedded, well cleaved rhyolite. Indications are that this stratigraphy is continuous with the Toodoggone Formation rocks immediately to the west. These rocks have been intruded by three varieties of plutonic rocks: syenite to syenodiorite; granodiorite; and quartz diorite which has been subject to moderate to intense kaolinite and pyrite alteration (up to 40 per cent) and silicification. The silicification is commonly so intense that all primary textures are obliterated. Three major fault systems intersect just west of the showing.

The Kevin showing consists of two zones of silicification and pyrite alteration hosted in granodiorite. The zones trend between 160 and 175 degrees and contain between 25 and 40 per cent pyrite. The zones are considerably more foliated than the host granodiorite.

Two one-metre chip samples were taken from this zone, both anomalous in silver and barium: Sample JS-86-P2001 yielded 4.9 grams per tonne silver and 0.09 per cent barium; and Sample JS-86-P2002 yielded 10.1 grams per tonne silver and 0.14 per cent barite (Assessment Report 15599).

South of this showing, 450 metres, at about 1500 metres elevation, a silicified zone with pyrite is found at the contact between feldspar porphyry and feldspar breccia. Sample JS-86-P2005 analysed 4.5 grams per tonne silver (Assessment Report 15599).

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291-293; 1985, pp. 299-300; 1986, pp. 167-174; 1987, pp. 111,
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER July 14, Sept. 29, Oct. 13, 1986
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1144
REPORT: RGEN0100

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DATE CODED: 1992/11/21
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 209**

NATIONAL MINERAL INVENTORY:

NAME(S): **BISHOP**, CHESS GROUP, KNIGHT,
KEVIN, CASTLE, EAST RIDGE,
CIRQUE, UPPER CREEK, LOWER CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:
LATITUDE: 57 21 58 N
LONGITUDE: 126 52 28 W
ELEVATION: 1610 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6360138
EASTING: 627840

COMMENTS: The location of samples JS-86-P3015 and P3016, from the Upper Creek zone (Assessment Report 15599). The showing is located 5.25 kilometres southeast of Toadoggone Lake and 6.25 kilometres southeast of the Mount Graves prospect (094E 087).

COMMODITIES: Silver Gold Copper Lead

MINERALS

SIGNIFICANT: Pyrite Arsenopyrite Chalcopyrite
COMMENTS: Mineralogy varies from zone to zone. Mineralization at the Cirque zone consists of up to 25 per cent pyrite and up to 1 per cent arsenopyrite. The Upper Creek zone contains an unidentified sulphide.

ASSOCIATED: Quartz
ALTERATION: Silica Pyrite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 30 x 30 Metres STRIKE/DIP: 170/
COMMENTS: The East Ridge zone covers an area of roughly 30 square metres. The East Ridge zone strikes 170 degrees. TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Hazelton	Undefined Formation	Black Lake Suite
Lower Jurassic			

LITHOLOGY: Feldspar Porphyry
Dacite
Rhyodacite
Siliceous Volcanic
Plagioclase Hornblende Tuff
Plagioclase Hornblende Breccia
Plagioclase Quartz Porphyry
Felsic Tuff
Felsic Breccia
Rhyolite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the cenral part of the Toadoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 4.4000 Grams per tonne
Gold 0.2190 Grams per tonne
COMMENTS: Sample 18456, from the Cirque zone.
REFERENCE: Assessment Report 18535.

CAPSULE GEOLOGY

The Bishop showing, composed of a zone of silicification and pyrite alteration, is located 6.75 kilometres east-southeast of

CAPSULE GEOLOGY

Toodoggone Lake and 8.75 kilometres east of the Mount Graves prospect (094E 087). Smithers is 290 kilometres to the south.

The Bishop showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Bishop showing is underlain by reasonably undivided volcanics, of the Hazelton Group. On a property scale, four units have been delineated from the volcanic stratigraphy. These consist of light grey to green plagioclase and hornblende plagioclase tuffs and breccias; grey-green, orange and brown, fine to coarse-grained plagioclase porphyry, including minor quartz-eye porphyry; felsic tuffs and breccias; and thin bedded, well cleaved rhyolite.

Indications are that this stratigraphy is continuous with the Toodoggone Formation rocks immediately to the west. These rocks have been intruded by three varieties of plutonic rocks: syenite to syenodiorite; granodiorite; and quartz diorite which has been subject to moderate to intense kaolinite and pyrite alteration (up to 40 per cent) and silicification. The silicification is commonly so intense that all primary textures are obliterated. Three major fault systems intersect just north of the showing.

The Bishop showing is composed of four separate zones which form a large silicified stockwork with pyrite alteration. The East Ridge, Cirque, Upper Creek and Lower Creek zones comprise the Bishop showing.

The East Ridge zone consists of a silicified stockwork, a feeder system and three multiple gossans, hosted in medium to coarse-grained feldspar porphyry. The stockwork consists of an area of intense silicified blue-grey dacite. The margins are marked by a transition through lesser degrees of silicification to a medium-grained unaltered feldspar porphyry. The zone trends 170 degrees and spans an area roughly 30 square metres. Several samples have been taken from this zone with the following results. Sample JS-86-P3007 yielded 1.8 grams per tonne silver and 0.14 per cent lead (Assessment Report 15599). Sample 18456 analysed 3.2 grams per tonne silver (Assessment Report 18535).

The Cirque zone is separated from the East Ridge zone by a north-northeast striking fault. The gossan consists of a series of oxidized outcrops, 3 to 5 metres apart and trending 280 degrees. These rocks are silicified dacitic feldspar porphyry grading to rhyodacite at the upper contact with a thin, well fractured felsic unit. The gossans range in exposed thickness from 3 to 5 metres. Mineralization includes up to 25 per cent pyrite and 1 per cent arsenopyrite. Sample JS-86-P3012 from this zone analysed 1.3 grams per tonne silver and 0.162 gram per tonne gold (Assessment Report 15599). Sample 18456 yielded 4.4 grams per tonne silver and 0.219 gram per tonne gold (Assessment Report 18535).

The Upper Creek zone is hosted in medium-grained feldspar porphyry with up to 1 per cent of an unidentified silver mineral. The siliceous alteration may form a continuous gossan with the Lower Creek zone. Sample JS-86-P3015 and P3016, from this zone, yielded 1.4 grams per tonne silver (Assessment Report 15599).

The Lower Creek zone, consisting of pervasively silicified feldspar porphyry, contains up to 25 per cent pyrite and 1 to 2 per cent arsenopyrite and chalcopyrite (Assessment Report 18535). No samples were taken.

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194

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- W MINER April, 1982
- N MINER July 14, Sept.29, Oct.13, 1986
- N MINER MAG March 1988, p. 1
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DATE CODED: 1992/11/23
DATE REVISED: 1993/05/04

CODED BY: KJM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 210**

NATIONAL MINERAL INVENTORY:

NAME(S): **NUB 4**, NUB MTN GROUP, NUB MTN 1-5,
 FINE, FINE 1-4

STATUS: Prospect
 REGIONS: British Columbia
 NTS MAP: 094E07E
 BC MAP:

MINING DIVISION: Omineca
 UTM ZONE: 09 (NAD 83)

LATITUDE: 57 16 33 N
 LONGITUDE: 126 44 01 W
 ELEVATION: 1820 Metres

NORTHING: 6350365
 EASTING: 636643

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample SC-44-80-11, taken from a zone of quartz vein breccia and stockwork (Assessment Report 9747). The prospect is located 11.0 kilometres south-southwest of Bend Mountain and 6.5 kilometres northwest of Budd Lake, west of the Finlay River.

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Pyrite Galena Chalcocopyrite Sphalerite Bornite
 ASSOCIATED: Quartz
 ALTERATION: Epidote Chlorite Calcite K-Feldspar Zeolite
 Specularite Magnetite Limonite

COMMENTS: The Nub 4 prospect has been classified as an adularia-sericite type epithermal mineral occurrence (Bulletin 86). Skarn and quartz-sericite alteration minerals are also present.

ALTERATION TYPE: Propylitic Potassic Zeolitic Hematite Argillic
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Stockwork
 CLASSIFICATION: Epithermal Epigenetic
 TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Lower Jurassic	Hazelton	Toodoggone	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Welded Quartz Crystal Tuff
 Quartz Crystal Tuff
 Crystal Lapilli Tuff
 Volcaniclastic
 Plagioclase Pyroxene Andesite Flow
 Plagioclase Pyroxene Andesite Tuff
 Greywacke
 Andesite
 Biotite Hornblende Granodiorite
 Plagioclase Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
 Zeolite

COMMENTS: Located in the east-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1981

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	409.7000	Grams per tonne
Gold	10.7000	Grams per tonne
Copper	0.0040	Per cent
Lead	0.0500	Per cent
Zinc	0.1000	Per cent

COMMENTS: Sample SC-44-80-11, from a grey quartz vein in volcanics.
 REFERENCE: Assessment Report 9747.

CAPSULE GEOLOGY

The Nub 4 prospect, a zone of quartz vein, breccia and stockwork hosted in Toodoggone volcanics, is located 11.0 kilometres south-southwest of Bend Mountain and 6.5 kilometres northwest of Budd Lake, west of the Finlay River. Smithers is 280 kilometres to the south.

The Nub 4 prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Nub 4 prospect area is underlain by volcanics and derived sediments of the Toodoggone Formation and regionally undivided, Lower to Middle Jurassic rocks of the Hazelton Group. These are intruded by multiphase granodiorite and quartz monzonite plutons of the Black Lake Suite (formerly the Omineca Intrusions). Takla Group volcanics consist of green to grey plagioclase and pyroxene porphyry andesite flows, subaqueous tuffs, greywacke and conglomerate. Toodoggone volcanics are divided into quartz-bearing and non-quartz-bearing units. The former contains 2 to 20 per cent quartz phenocrysts and is more common than the later. Both contain 10 to 35 per cent plagioclase and rare potassium feldspar phenocrysts in unwelded and welded crystal tuffs and crystal lapilli tuffs, volcaniclastics and rare pyroclastic breccias. A large multiphase pluton is exposed east of the Nub 4 prospect, composed of biotite, hornblende granodiorite cut by plagioclase feldspar porphyry quartz monzonite. The rocks are highly fractured due to faulting and the intrusion of plutons. The dominant trend of faulting is 150 and 120 degrees. Small monzonite stocks and dikes are common.

Propylitic alteration is ubiquitous in the area and consists of chlorite, epidote, calcite and pyrite. Exceptions are in areas of intense hematization. Potassic alteration occurs in fractured volcanics immediately adjacent to intrusions. Takla Group volcanics tend to be skarn altered with magnetite, actinolite, epidote, and pyrrhotite. Extensive areas of volcanics have been pyrite altered, subsequent leaching resulting in pronounced gossans. Quartz-sericite-pyrite, zeolite and argillic (kaolinite) alteration occur along fault structures.

Quartz vein breccia and stockwork occur within Toodoggone crystal to lapilli tuffs and altered intrusive rocks. Quartz is massive to cockscomb-textured and contains disseminated pyrite, galena, chalcopyrite, sphalerite, and rarely bornite. Gangue minerals include calcite, epidote, chlorite, barite, specularite and manganese oxides. Gold and silver values are associated with both sulphide-bearing and nonsulphide-bearing veins and are extremely erratic.

The Nub 4 prospect consists of a zone of grey quartz veins with or without bornite and pyrite hosted in a moderately pronounced gossan within Toodoggone volcanic rocks, west of a major north-northwest striking fault. Sample CC-17-81-1, from a quartz vein, analysed 4.7 grams per tonne gold and 15.0 grams per tonne silver (Assessment Report 9747). Sample SC-44-80-11, from a grey quartz vein in volcanics, yielded 10.7 grams per tonne gold, 409.7 grams per tonne silver, 0.10 per cent zinc, 0.05 per cent lead and 0.004 per cent copper (Assessment Report 9747).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
*291-293; 1985, pp. 299-300; 1986, pp. *167-174; 1987, pp. 111,
114-115; 1989, pp. 409-415; 1991, pp. 207-216

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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle Jurassic Toodoggone Formation, Toodoggone Mining District, British Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/11/24
DATE REVISED: 1992/11/24

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 211**

NATIONAL MINERAL INVENTORY:

NAME(S): **NUB 1**, NUB MTN GROUP, NUB MTN 1-5,
FINE, FINE 1-4

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E07E
BC MAP:

LATITUDE: 57 16 34 N
LONGITUDE: 126 43 16 W
ELEVATION: 1770 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample SC-16-81-5 from a zone of quartz vein breccia and stockwork (Assessment Report 9747). The Nub 4 prospect is located 10.5 kilometres south-southwest of Bend Mountain and 6.0 kilometres northwest of Budd Lake, west of the Finlay River.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6350421
EASTING: 637396

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Galena Sphalerite Pyrite

COMMENTS: The significant mineralogy is inclusive of all samples from this zone.

ASSOCIATED: Quartz Calcite
ALTERATION: Epidote Chlorite Calcite K-Feldspar Zeolite
Specularite Magnetite Limonite

COMMENTS: The prospect is an adularia-sericite type epithermal occurrence (Bulletin 86). Manganese oxides are also present.

ALTERATION TYPE: Propylitic Potassic Zeolitic Hematite Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Lower Jurassic	Hazelton	Toodoggone	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Welded Quartz Crystal Tuff
Quartz Crystal Tuff
Crystal Lapilli Tuff
Volcaniclastic
Plagioclase Pyroxene Andesite Flow
Plagioclase Pyroxene Andesite Tuff
Greywacke
Andesite
Biotite Hornblende Granodiorite
Feldspar Porphyry Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the east-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1981

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	75.9000	Grams per tonne
Gold	0.1400	Grams per tonne
Copper	9.5400	Per cent
Lead	0.0100	Per cent
Zinc	0.0300	Per cent

COMMENTS: Sample SC-45-80-9, of chalcopyrite fracture filling in volcanics.

REFERENCE: Assessment Report 9747.

CAPSULE GEOLOGY

The Nub 1 prospect, a zone of quartz vein breccia and stockwork hosted in Toodoggone volcanics, is located 10.5 kilometres south-southwest of Bend Mountain and 6.0 kilometres northwest of Budd Lake, west of the Finlay River. Smithers is 280 kilometres to the south.

The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Nub 1 prospect area is underlain by volcanics and derived sediments of the Toodoggone Formation and regionally undivided, Lower to Middle Jurassic rocks of Hazelton Group. These are intruded by multiphase granodiorite and quartz monzonite plutons of the Black Lake Suite (formerly part of the Omineca intrusions). Takla Group volcanics consist of green to grey plagioclase and pyroxene porphyry andesite flows, subaqueous tuffs, greywacke and conglomerate. Toodoggone volcanics are divided into quartz-bearing and non-quartz bearing units. The former contains 2 to 20 per cent quartz phenocrysts and is more common than the later. Both contain 10 to 35 per cent plagioclase and rare potassium feldspar phenocrysts in unwelded and welded crystal tuffs and crystal lapilli tuffs, volcanoclastics and rare pyroclastic breccias. A large multiphase pluton is exposed east of the Nub 1 prospect, composed of biotite, hornblende granodiorite cut by plagioclase feldspar porphyry quartz monzonite. The rocks are highly fractured due to faulting and the intrusion of plutons. The dominant trend of faulting is 150 and 120 degrees. Small monzonite stocks and dikes are common.

Propylitic alteration is ubiquitous in the area and consists of chlorite, epidote, calcite and pyrite. Exceptions are in areas of intense hematization. Potassic alteration occurs in fractured volcanics immediately adjacent to intrusions. Takla Group volcanics tend to be skarn altered with magnetite, actinolite, epidote, and pyrrhotite. Extensive areas of volcanics have been pyrite altered, subsequent leaching resulting in pronounced gossans. Quartz-sericite-pyrite, zeolite and argillic (kaolinite) alteration occur along fault structures.

Quartz vein breccias and stockwork occur within Toodoggone crystal to lapilli tuffs and altered intrusive rocks. Quartz is massive to cockscomb-textured and contains disseminated pyrite, galena, chalcopyrite, sphalerite, and rarely bornite. Gangue minerals include calcite, epidote, chlorite, barite, specularite and manganese oxides. Gold and silver values are associated with both sulphide-bearing and nonsulphide-bearing veins and are extremely erratic.

The Nub 1 prospect consists of a zone of grey quartz veins with galena, sphalerite, chalcopyrite and pyrite, and fracture-hosted chalcopyrite, within a moderately pronounced gossan in Toodoggone volcanic rocks, east of a major north-northwest striking fault. Sample SC-45-80-9, from volcanics with chalcopyrite, analysed 0.14 gram per tonne gold, 75.9 grams per tonne silver, 9.54 per cent copper, 0.01 per cent lead and 0.03 per cent zinc (Assessment Report 9747). Sample SC-16-81-5, from a quartz-calcite vein with galena, sphalerite and pyrite, yielded 3.9 grams per tonne gold and 8.2 grams per tonne silver (Assessment Report 9747).

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DATE CODED: 1992/11/24
DATE REVISED: 1992/11/24

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 212**

NATIONAL MINERAL INVENTORY:

NAME(S): **TO 2**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 23 16 N
LONGITUDE: 126 56 32 W
ELEVATION: 1420 Metres

NORTHING: 6362424
EASTING: 623691

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample 8018D, taken from a quartz vein, located 1.75 kilometres south of Toodoggone Lake and 1.25 kilometres northeast of the Mount Graves prospect (094E 087) (Assessment Report 9279).

COMMODITIES: Zinc Copper Lead Silver Gold

MINERALS

SIGNIFICANT: Pyrite Sphalerite Chalcopyrite Galena

COMMENTS: Significant minerals are 10 per cent combined.

ASSOCIATED: Quartz

ALTERATION: Epidote Clay Pyrite

ALTERATION TYPE: Propylitic Argillic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Hydrothermal Epigenetic

COMMENTS: The vein is about 10 centimetres wide (Assessment Report 9279).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toodoggone

LITHOLOGY: Lithic Tuff
Plagioclase Porphyry Andesite
Porphyritic Andesite
Basalt
Dacite
Quartz Vein
Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1981

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	6.5100	Grams per tonne
Gold	0.0680	Grams per tonne
Copper	0.2760	Per cent
Lead	0.1000	Per cent
Zinc	0.5200	Per cent

COMMENTS: Sample 8018D.

REFERENCE: Assessment Report 9279.

CAPSULE GEOLOGY

The TO 2 showing, a quartz vein in porphyritic andesite, is located 1.75 kilometres south of Toodoggone Lake and 1.25 kilometres northeast of the Mount Graves prospect (094E 087) (Assessment Report 9279). Smithers is 290 kilometres to the south.

The TO 2 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks

CAPSULE GEOLOGY

exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The TO 2 showing is located within a belt of regionally undivided volcanics and associated sediments of the Toadoggone Formation. On a property scale, these rocks have been subdivided into the following units. The main lithology underlying the TO 2 showing is a plagioclase porphyritic andesite with epidote and clay alteration of plagioclase phenocrysts. Narrow veinlets of epidote are common and outcrops near the contact with monzonite contain moderate pyrite. Other lithologies evident in the area include basalt, dacite, and lithic tuff. Tuffs strike north-northwest and dip 35 to 45 degrees. Narrow quartz vein (2 to 3 centimetres wide) containing pyrite are common in dacite.

A 10-centimetre wide quartz vein comprising the TO 2 showing, is hosted in lithic tuff and contains about 10 per cent combined pyrite, chalcopyrite, sphalerite and galena. Sample 8018D from this vein analysed 0.068 gram per tonne gold, 6.51 grams per tonne silver, 0.52 per cent zinc, 0.276 per cent copper and 0.10 per cent lead (Assessment Report 9279).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
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DATE CODED: 1992/11/25
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 213**

NATIONAL MINERAL INVENTORY:

NAME(S): **ATLAS**, HERCULES

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 18 11 N
LONGITUDE: 126 54 15 W
ELEVATION: 1760 Metres

NORTHING: 6353065
EASTING: 626269

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Trench 2, exposing a quartz-chalcedony breccia zone. Located 1.5 kilometres northwest of The Pillar and 7.5 kilometres northeast of the Shasta deposit (094E 050) (Assessment Report 10326).

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Chalcedony Amethyst
COMMENTS: Trenching has revealed three or more generations of quartz veining and brecciation.

ALTERATION: Silica Clay Specularite Chlorite Zeolite

ALTERATION TYPE: Sericite Argillic Propylitic Zeolitic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 8 Metres STRIKE/DIP: 125/

TREND/PLUNGE:

COMMENTS: The dominant trend of veins appears to be 125 to 135 degrees (Assessment Report 10326). Trench 2 has exposed at least 8 metres of quartz-chalcedony breccia.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Toodoggone	

ISOTOPIC AGE: 192.9 +/- 2.7 Ma

DATING METHOD: Argon/Argon

MATERIAL DATED: Hornblende

Lower Jurassic

Black Lake Suite

LITHOLOGY: Feldspar Porphyry Andesite
Quartz Chalcedony Breccia
Crystal Lapilli Tuff
Breccia
Porphyry Dike
Sediment/Sedimentary

HOSTROCK COMMENTS: The age given is the oldest age for the Saunders Member of the Toodoggone Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the east-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1982

SAMPLE TYPE: Chip

COMMODITY

GRADE

Silver

91.5400

Grams per tonne

Gold

0.8200

Grams per tonne

COMMENTS: Weighted average value over a 7 metre interval for gold and a 5 metre interval for silver.

REFERENCE: Assessment Report 10326.

CAPSULE GEOLOGY

The Atlas prospect, a quartz-chalcedony breccia zone, is located 1.5 kilometres northwest of The Pillar and 7.5 kilometres northeast of the Shasta occurrence (094E 050) (Assessment Report 10326). The prospect is located in the central part of the Toodoggone gold camp, 280 kilometres north of Smithers.

The Atlas prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Atlas prospect is underlain by crystal lapilli tuff, breccia and derived sediments contained within a fault bound panel of the Saunders Member, Toodoggone Formation. The volcanics are characterized by plagioclase and minor potassic feldspar phenocrysts. These are intruded by porphyry dikes. Fracture controlled propylitic and argillic alteration are common. These are surrounded by volcanics of the Metsantan Member, Toodoggone Formation.

The Atlas prospect consists of a quartz-chalcedony breccia zone, hosted in feldspar porphyry andesite. The groundmass is moderately to intensely altered to chlorite and clay minerals throughout the whole breccia zone. Feldspar phenocrysts are generally altered to sericite and other secondary minerals, possibly a bright orange zeolite. Two trenches have revealed three or more generations of veining and brecciation. Vein materials include black chalcedony, milky white or grey chalcedony, clear to amethystine cockscomb quartz and rare pyrite. The veins are commonly laminated. Wallrock in the breccia zone may or may not be silicified. In Trench 2, the host rock is strongly clay altered and contains specularite. Vein orientations are generally not well defined. The dominant trend appears to be 125 to 135 degrees, parallel to a fault zone.

Significant assay results were obtained from Trench 2 where there was greater than 50 per cent vein material. Grades averaged 91.54 grams per tonne silver over 7 metres and 0.82 gram per tonne over 5 metres (Assessment Report 10326). The best 1-metre interval assay was 147.1 grams per tonne silver and 0.99 gram per tonne gold (Assessment Report 10326).

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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991

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MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1158
REPORT: RGEN0100

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Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/11/25
DATE REVISED: 1993/02/09

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 214**

NATIONAL MINERAL INVENTORY:

NAME(S): **GWP**, GWP 1 GROUP, GWP 1-10,
CASSIDY 6 GROUP, GWP 1, GWP 41,
GWP 200, NE, NE 99-106,
GO, GO 90, GO 92,
GO 102-114, RI, RI 101-103

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

LATITUDE: 57 21 41 N
LONGITUDE: 127 00 01 W
ELEVATION: 1640 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Trench 1. Located 5 kilometres south-southwest of
Toodoggone Lake and 2.5 kilometres southwest of the Mount Graves
prospect (094E 087). Smithers is 290 kilometres to the south.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6359383
EASTING: 620289

COMMODITIES: Silver Gold Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite

COMMENTS: Chalcopyrite is minor.

ASSOCIATED: Quartz Magnetite Barite

ALTERATION: Quartz Calcite Hematite Limonite Kaolinite
Montmorillonite Illite Malachite

COMMENTS: Clays determined by X-ray diffraction (Forster, 1984).

ALTERATION TYPE: Silicific'n Argillic Oxidation Leaching Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork

CLASSIFICATION: Epithermal Epigenetic

TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation

DIMENSION: 1000 x 20 Metres STRIKE/DIP: 305/

COMMENTS: Silicified stockwork zones are up to 1000 metres long by 20 metres
wide (Forster, 1984), with individual veins up to 60 metres long by 10
metres wide, striking 305 degrees (Assessment Report 14696). TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Hazelton Toodoggone

ISOTOPIC AGE: 200 +/- 7 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite Tuff
Andesite
Trachyandesite Flow
Trachyandesite
Lapilli Tuff
Lahar
Volcanic Sandstone
Conglomerate

HOSTROCK COMMENTS: The age is the oldest for the Metsantan Member of the Toodoggone
Formation (Bulletin 86).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1984

COMMODITY	GRADE	
Silver	1.6000	Grams per tonne
Gold	0.1000	Grams per tonne

COMMENTS: Sample 84053, a 1.25-metre chip sample from Trench 1.
REFERENCE: Assessment Report 14696.

CAPSULE GEOLOGY

The GWP showing is located 5 kilometres south-southwest of Toodoggone Lake and 2.5 kilometres southwest of the Mount Graves prospect (094E 087). Smithers is 290 kilometres to the south. The GWP prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group. The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The GWP showing area is nearly flat with silicified zones forming rounded hills, and the clay alteration zones forming depressions. Silicified stockwork zones up to 1000 metres long and 20 metres wide strike north-northwesterly within gently dipping andesite tuffs (Forster, 1984) of the Metsantan Member (Bulletin 86). The Metsantan Member is described, regionally, as being composed of trachyandesite flows with lenses of lapilli tuff, and lahar; minor volcanic sandstone and conglomerate (Bulletin 86). Large quartz veins and quartz-sericite veins strike 305 degrees and are up to 60 metres long by 10 metres wide. Some strong clay (argillic) zones parallel to the veins are 5 to 6 metres wide. Barite occurs locally within the quartz veins (Assessment Report 14696).

The stockwork zones contain pyrite, magnetite and barite with minor chalcopyrite and associated malachite. Alteration minerals associated with sulphide mineralization include quartz, calcite, hematite, limonite, kaolinite, montmorillonite and illite.

The alteration, mineralogy, and textural characteristics of the volcanic rocks and mineralized zones are similar to those mineral occurrences on the Silver Pond property (094E 060, 075, 160, 161, 162, 163), although visible gold and silver are not documented on the GWP showing (Forster, 1984).

Gold and silver anomalies were discovered during property exploration in 1981. Geochemical analyses yielded precious metal concentrations up to 3.5 grams per tonne silver and 0.535 gram per tonne gold (Assessment Report 14696). Follow-up property work, in the summer of 1985, was less rewarding. The best results were from Trench 1, a trench that exposed clay, sericite, quartz and limonite in zone of silicified and altered porphyry volcanics. Chip samples yielded 1.6 grams per tonne silver and 0.085 gram per tonne gold over 3.75 metres (84056); and 1.4 grams per tonne silver and 0.10 gram per tonne gold over 1.25 metres (Assessment Report 14696).

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W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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DATE CODED: 1992/11/27
DATE REVISED: 1992/11/27

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 215**

NATIONAL MINERAL INVENTORY:

NAME(S): **MICHEL**, ANNA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 17 37 N
LONGITUDE: 126 54 33 W
ELEVATION: 1480 Metres

NORTHING: 6352005
EASTING: 626000

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample 106832 (Assessment Report 16803). The showing is located 1.75 kilometres west-southwest of The Pillar, north of Jock Creek, and 6.75 kilometres northeast of the Shasta occurrence (094E 050). Smithers is 290 kilometres to the south.

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Unknown
COMMENTS: Chalcopyrite, bornite, barite, pyrite and quartz showings occur in the area (Assessment Report 16803).

ASSOCIATED: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Bedded Lapilli Tuff
Pyroclastic Breccia
Accretionary Lapilli Tuff
Porphyritic Andesite
Basalt Lava Flow
Basalt
Volcanic Conglomerate
Siltstone
Felsic Dike
Andesite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 3.7000 Grams per tonne
Copper 0.1900 Per cent

COMMENTS: Sample 106832.
REFERENCE: Assessment Report 16803.

CAPSULE GEOLOGY

The Michel showing, an anomalous sample taken from an area of several chalcopyrite, bornite, barite, pyrite and quartz showings, is located 1.75 kilometres west-southwest of The Pillar and 6.75 kilometres northeast of the Shasta occurrence (094E 050) (Assessment Report 16803). The showing is located in the central part of the Toodoggone gold camp, 280 kilometres north of Smithers.

The Michel showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

CAPSULE GEOLOGY

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Undivided Lower to Middle Jurassic volcanic rocks and volcanic-derived sedimentary rocks of the Hazelton Group comprise lithologies underlying the Michel showing. Lithologies include well-bedded lapilli tuff and pyroclastic breccia, rare accretionary lapilli tuff; pyroclastic andesite and subordinate basalt lava flows; interspersed volcanic conglomerate, laminated siltstone and mudstone (Bulletin 86). Felsic and andesitic dikes and porphyry sills cut this package.

Assay results from sample 106832, taken at the Michel showing, were 3.7 grams per tonne silver and 0.19 per cent copper (Assessment Report 16803). No mineralization was reported from this sample but several chalcopyrite, bornite, barite, pyrite and quartz showings occur in the area (Assessment Report 16803).

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DATE CODED: 1992/12/01
DATE REVISED: 1992/12/01

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 216**

NATIONAL MINERAL INVENTORY:

NAME(S): **BROOKE**, BLACK, BLACK 43-45,
BLACK NO.2 GROUP, LEE, ERIN,
ORANGE, ARG, ARG 1-4,
ADRIAN, PAUL, OTTO,
IAN, ARGUS, ARGUS 1-2,
OJ

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:
LATITUDE: 57 18 54 N
LONGITUDE: 126 56 40 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The approximate location of sample KX26519, taken from a showing on the Black 44 claim, situated 4.25 kilometres northwest of The Pillar and 10 kilometres due south of Toodoggone Lake (Assessment Report 3987). The showing is 280 kilometres north of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6354321
EASTING: 623803

COMMODITIES: Copper Silver Gold Zinc Lead

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Barite
ALTERATION: Malachite Azurite Goethite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Syenite
Syenite Porphyry
Syenite Dike
Quartz Monzonite
Biotite Hornblende Granodiorite
K-Feldspar Epidote Latite Porphyry
Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the south-central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 3.7400 Grams per tonne
Gold 0.0340 Grams per tonne
Copper 1.5400 Per cent
Zinc 0.2750 Per cent
COMMENTS: Sample KX26519.
REFERENCE: Assessment Report 3987.

CAPSULE GEOLOGY

The Brooke showing, is located 4.6 kilometres southwest of the Pillar, south of Jock Creek, and 7.0 kilometres east-northeast of the Shasta occurrence (094E 050) (Assessment Report 16804). Smithers is 280 kilometres to the south.

The showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane

CAPSULE GEOLOGY

Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Brooke showing is hosted within a northwest trending, lens-shaped, Early Jurassic, equigranular biotite, hornblende granodiorite to quartz monzonite and rare diorite stock of the Black Lake Suite (Bulletin 86). The oldest rocks underlying the Brooke showing appear to be equigranular, holocrystalline quartz monzonite with goethite staining where magnetite has been oxidized on fracture surfaces. This is intruded by syenite and syenite porphyry dikes. Both these units are intruded by a potassium feldspar-epidote, latite porphyry. The showing proper is hosted in undifferentiated syenite and syenite porphyry rocks.

The Brooke showing consists of chalcopyrite, pyrite, quartz and barite within and adjacent to a gossan developed along the subhorizontal contact between the stock and volcanics and associated intrusives of the Toodoggone Formation. Malachite and azurite staining are present.

Assay results from sample KX26519 were 3.74 grams per tonne silver, 0.034 gram per tonne gold, 1.50 per cent copper and 0.275 per cent zinc (Assessment Report 3987). In 1987, sampling 500 metres south-southwest along the same ridge where the above sample was taken, yielded additional anomalous results. Sample 106087 analysed 6.8 grams per tonne silver, 0.305 gram per tonne gold, 0.032 per cent copper, 0.020 per cent zinc and 0.012 per cent lead (Assessment Report 16804).

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N MINER Oct.13, 1986
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IPDM Nov/Dec 1983
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1166
REPORT: RGEN0100

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DATE CODED: 1985/07/24
DATE REVISED: 1992/11/14

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 217**

NATIONAL MINERAL INVENTORY:

NAME(S): **LAR, PIL**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 18 21 N
LONGITUDE: 126 52 04 W
ELEVATION: 1910 Metres

NORTHING: 6353443
EASTING: 628451

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Samples 6897 and 6900, 1.3 kilometres northwest of the Pillar and 7.5 kilometres northeast of the Shasta occurrence (094E 050) (Assessment Report 17451).

COMMODITIES: Lead Silver Gold Zinc Copper

MINERALS

SIGNIFICANT: Pyrite
COMMENTS: Three to 5 per cent disseminated pyrite is reported (Assessment Report 17451).

ASSOCIATED: Quartz

ALTERATION: Limonite Quartz Pyrite Epidote K-Feldspar

ALTERATION TYPE: Argillic Epidote Potassic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

DIMENSION: 150 x 50 Metres STRIKE/DIP:

COMMENTS: Quartz veins, 2 to 4 centimetres wide, are found within an argillic alteration zone 150 metres long by 50 metres wide (Assessment Report 17451).

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Altered K-Feldspar Biotite Andesite
Feldspar Porphyry Andesitic Tuff
Feldspar Porphyry Andesitic Flow
Feldspar Porphyry Dacite Flow
Dacite
Quartz Vein
Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

PHYSIOGRAPHIC AREA: Omineca Mountains

TERRANE: Stikine

METAMORPHIC TYPE: Regional

RELATIONSHIP:

GRADE: Greenschist
Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988

SAMPLE TYPE: Grab

COMMODITY

COMMODITY	GRADE	
Silver	4.4000	Grams per tonne
Gold	0.0300	Grams per tonne
Copper	0.0190	Per cent
Lead	0.5700	Per cent
Zinc	0.0250	Per cent

COMMENTS: Sample 6897.

REFERENCE: Assessment Report 17451.

CAPSULE GEOLOGY

The Lar showing, an argillic alteration zone 150 metres long by 50 metres wide, is located 1.3 kilometres northwest of The Pillar and 7.5 kilometres northeast of the Shasta occurrence (094E 050). The showing is located in the central part of the Toodoggone gold camp, 280 kilometres north of Smithers.

CAPSULE GEOLOGY

The Lar showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Lar showing is underlain by flows and tuffs of the Toodoggone Formation. Generally these volcanics are characterized by grey to grey-maroon feldspar porphyry andesitic to dacitic tuffs and flows, locally exhibiting bedding and flow banding. Finely disseminated specularite within the volcanics is common. These are intruded by porphyry dikes. Fracture controlled propylitic and argillic alteration are common. These are surrounded by Toodoggone volcanics of the Metsantan Member.

The showing consists of an argillic alteration zone, 150 metres long by 50 metres wide, on an east-west trending ridge. An alteration assemblage of potassium feldspar-quartz-pyrite plus or minus epidote was noted. Pyrite, as disseminations, ranges from 3 to 5 per cent. The hostrock of this alteration zone is potassium (?) -feldspar biotite andesite. Numerous quartz veins with limonite were sampled. These veins are randomly oriented and 2 to 4 centimetres wide.

The two best samples both yielded anomalous silver. Sample 6897 analysed 4.4 grams per tonne silver, 0.03 gram per tonne gold, 0.57 per cent lead, 0.025 per cent zinc and 0.019 per cent copper. A silver assay of 5.6 grams per tonne was obtained from sample 6900 (Assessment Report 17451).

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W MINER April, 1982
N MINER Oct.13, 1986
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RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1169
REPORT: RGEN0100

BIBLIOGRAPHY

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DATE CODED: 1992/11/28
DATE REVISED: / /

CODED BY: KJM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 218**

NATIONAL MINERAL INVENTORY:

NAME(S): **DUKE**, DUKE 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E07W
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 23 45 N
LONGITUDE: 126 56 21 W
ELEVATION: 1590 Metres

NORTHING: 6363326
EASTING: 623848

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Samples CL-2-81-3 and 5, taken 1 kilometre south of Toodoggone Lake and 2.75 kilometres northeast of the Mount Graves prospect (094E 087) (Assessment Report 17226).

COMMODITIES: Silver Gold Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Epidote
ALTERATION: Silica Malachite Azurite
ALTERATION TYPE: Silicific'n Oxidation Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Jurassic	Hazelton	Undefined Formation	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Augite Porphyritic Flow
Augite Porphyritic Breccia
Feldspar Porphyritic Andesite Flow
Feldspar Porphyritic Andesite Breccia
Plagioclase Porphyritic Andesite
Granodiorite
Diorite
Feldspar Porphyry
Hornblende Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the central part of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1981
SAMPLE TYPE: Grab	
<u>COMMODITY</u>	<u>GRADE</u>
Silver	13.5000 Grams per tonne
Gold	0.0200 Grams per tonne
Copper	0.0780 Per cent

COMMENTS: Sample CL-2-81-4, from a quartz vein in greenstone.
REFERENCE: Assessment Report 9502.

CAPSULE GEOLOGY

The Duke showing, composed of several quartz veins with chalcopyrite, is 1 kilometre south of Toodoggone Lake and 2.75 kilometres northeast of the Mount Graves showing (094E 087) (Assessment Report 17226). Smithers is 290 kilometres to the south. The Duke showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with

CAPSULE GEOLOGY

Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Duke showing lies adjacent to a granodiorite to diorite stock of the Black Lake Suite (formerly the Omineca Intrusions) near its contact with undivided volcanics of the Hazelton Group. Hazelton Group volcanics consist of grey, green and purple feldspar porphyritic andesitic flows and pyroclastic breccias, plagioclase porphyritic andesite and augite porphyritic flows and breccias. Bedding strikes northwest and dips moderately to the northeast. Numerous pink feldspar porphyry and hornblende porphyry dikes and sills are associated with the volcanics. Numerous other small granodiorite stocks and plugs crop out in the area.

Abundant disseminated pyrite occurs in contact areas between volcanics and intrusive rocks. These are evident as prominent gossans, some of which also contain quartz veins and/or silica veins and breccias.

The Duke showing consists of several quartz veins with chalcopyrite hosted in augite porphyritic flows and breccias. These crop out on the north face, near the top, of an east-trending ridge. Sample CL-2-81-3, of a quartz and epidote vein with associated malachite and azurite, yielded 18.4 grams per tonne silver, 0.015 gram per tonne gold and 0.079 per cent copper. Sample CL-2-81-4, of a quartz vein, analysed 13.5 grams per tonne silver, 0.02 gram per tonne gold and 0.078 per cent copper (Assessment Report 9502).

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GSC OF 306; 483
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W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
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IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
Forster, D.B. (1984): Geology, Petrology and Precious Metal
Mineralization, Toadoggonne River Area, North-Central British
Columbia, Unpub. Ph.D. Thesis, University of British Columbia
Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toadoggonne Formation, Toadoggonne Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/11/28
DATE REVISED: 1993/05/04

CODED BY: KJM
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 219**

NATIONAL MINERAL INVENTORY: 094E9 Cu2

NAME(S): **DOLLY, DOLLY 1-4, BAS,**
BAS 1-10, RPM, REV

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E09E
BC MAP:

LATITUDE: 57 32 17 N
LONGITUDE: 126 12 47 W
ELEVATION: 1200 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: The approximate center of the Dolly claims, exposing a series of veins (Assessment Report 8462). The showing is located 2.25 kilometres northeast of Mount Basnett, south of the Finlay River.

MINING DIVISION: Omineca

UTM ZONE: 09 (NAD 83)

NORTHING: 6380707
EASTING: 666822

COMMODITIES: Lead Silver Copper

MINERALS

SIGNIFICANT: Galena Tetrahedrite
ASSOCIATED: Pyrite Quartz Dolomite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 13 Metres STRIKE/DIP: 185/W
COMMENTS: A series of quartz veins strike 185 to 210 degrees, dipping steeply to the west and varying in width from 0.2 to 13 metres.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Cambrian-Ordovician
Lower Cambrian

GROUP

Kechika
Atan

FORMATION

Undefined Formation
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dolomite
Calcareous Shale
Phyllite
Limestone
Siltstone
Quartzite
Sandstone
Conglomerate
Quartz Vein

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Cache Creek

METAMORPHIC TYPE: Regional

COMMENTS: Located immediately west of the Rocky Mountain Trench.

PHYSIOGRAPHIC AREA: Omineca Mountains

GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1969

SAMPLE TYPE: Rock

COMMODITY

GRADE

Silver	617.0000	Grams per tonne
Copper	2.8000	Per cent
Lead	20.0000	Per cent

COMMENTS: All values are arithmetic averages from samples obtained from E. Bronlund, about 1948. Widths reported are several inches.

REFERENCE: Assessment Report 2471.

CAPSULE GEOLOGY

The Dolly showing is located 2.25 kilometres northeast of Mount Basnett, south of the Finlay River. Smithers is 320 kilometres to the south.

The regional geology consists of a northwest trending belt of Lower Cambrian Atan Group and Cambrian to Ordovician Kechika Group rocks within the Omineca Range and the Finlay River area. Limestone, phyllite, and calcareous shale comprise lithologies of the Kechika Group and limestone, siltstone, dolomite, quartzite, shale, sandstone and conglomerate comprise the Atan Group. The general trend of these

CAPSULE GEOLOGY

formations is 345 to 350 degrees with steep dips to the southwest. Contacts between units are fairly sharp.

The Dolly showing is underlain by a 103-metre thick dolomite bed striking northwesterly and dipping southwesterly. A series of quartz veins cut the dolomite bed hosting the Dolly showing. The veins strike 185 to 210 degrees and dip steeply west. The veins vary in width from 0.2 to 13.0 metres and are mineralized with galena, tetrahedrite and minor pyrite (Assessment Report 8462).

The only assay information found for the Dolly showing was from Assessment Report 2471, where samples obtained by E. Bronlund (1948) analysed 20 per cent lead, 2.8 per cent copper and 617 grams per tonne silver. Widths reported are of the order of several inches.

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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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Mineralization, Toodoggone River Area, North-Central British
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/02

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 220**

NATIONAL MINERAL INVENTORY:

NAME(S): **URN**, URN 10-12, KEC,
KEC 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E09W 094E09E
BC MAP:

MINING DIVISION: Omineca

LATITUDE: 57 35 42 N
LONGITUDE: 126 15 19 W
ELEVATION: 1500 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6386940
EASTING: 664039

COMMENTS: The location of sample I-13 at the Urn showing, situated along the western flank of Mount Finlay, between the Finlay River and Cutoff Creek (Assessment Report 10930).

COMMODITIES: Copper Zinc

MINERALS

SIGNIFICANT: Sphalerite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Azurite Hydrozincite
ALTERATION TYPE: Oxidation Leaching
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: One quartz vein was 2 metres wide (Assessment Report 10930).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic Ingenika Undefined Formation

LITHOLOGY: Phyllitic Limestone
Shale
Shaly Limestone
Dolomite
Siltstone
Sandstone
Phyllite
Quartzite
Quartz Carbonate Vein
Feldspar Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1982
SAMPLE TYPE: Grab
COMMODITY GRADE PERCENT
Copper 0.3600 Per cent
COMMENTS: Sample I-13.
REFERENCE: Assessment Report 10930.

CAPSULE GEOLOGY

The Urn showing is located along the western flank of Mount Finlay, between the Finlay River and Cutoff Creek (Assessment Report 10930).

The area is underlain by a sequence of Upper Proterozoic Ingenika Group sediments. These comprise a thick sequence of phyllitic limestone, shale, shaly limestone, dolomite, siltstone, sandstone, phyllites, and pure and impure quartzite. Feldspar porphyry dikes follow late normal faulting in the area (Assessment Report 10202).

In the area of the Urn showing, quartz-carbonate veins +/- sphalerite were found to be abundant within a resistant massive limestone horizon. Several were evident with malachite, azurite and hydrozincite staining. One vein has a thickness of greater than 2

CAPSULE GEOLOGY

metres. Stringer-type mineralization within the limestone is a positive indication of stratiform mineralization below or adjacent to this zone (Assessment Report 10202).

The best assay from rock samples collected in 1981 was sample T-7 which yielded 0.185 per cent copper. Most samples analysed greater than 0.25 per cent barium (Assessment Report 10202). In 1982, further rock sampling was conducted. Several of these samples analysed greater than 0.1 per cent copper; sample I-13 analysed 0.36 per cent copper (Assessment Report 10930).

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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973

DATE CODED: 1985/07/24
DATE REVISED: 1992/12/03

CODED BY: GSB
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 221**

NATIONAL MINERAL INVENTORY:

NAME(S): **STIK 4**, STIK, STIK 1-5

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E12E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 35 36 N
LONGITUDE: 127 32 53 W
ELEVATION: 1800 Metres

NORTHING: 6384365
EASTING: 586790

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample GW-ST-9, on the Stik 4 claim located 8.0 kilometres northeast of the confluence of Adoogacho Creek with the Stikine River and 15.0 kilometres northwest of the Alberts Hump prospect (094E 085) (Assessment Report 17237, Map 2).

COMMODITIES: Silver Gold

MINERALS

SIGNIFICANT: Unknown
COMMENTS: Pyrite, chalcopyrite and galena-bearing quartz float was found downslope further to the north (Assessment Report 17237).

ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 204 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			
Cretaceous	Sustut	Tango Creek	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Crystal Tuff
Agglomerate
Siliceous Rock
Trachydacite Ash Flow Tuff
Trachyandesite
Lapilli Tuff
Volcanic Sandstone
Conglomerate
Biotite Hornblende Gabbro
Biotite Hornblende Diorite

HOSTROCK COMMENTS: The age given is the oldest for the Adoogacho Member of the Toodoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Greenschist Zeolite

COMMENTS: Located in the northwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 32.9100 Grams per tonne
Gold 0.0450 Grams per tonne
COMMENTS: Sample GW-ST-9.
REFERENCE: Assessment Report 17237.

CAPSULE GEOLOGY

The Stik 4 showing, consisting of a silicified fracture zone cutting altered crystal tuff, is located 8.0 kilometres northeast of

CAPSULE GEOLOGY

the confluence of Adoogacho Creek with the Stikine River and 15.0 kilometres northwest of the Alberts Hump prospect (094E 085). Smithers is 310 kilometres to the south.

The Stik 4 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Mapping has indicated that the Stik 4 showing is underlain by the Adoogacho Member of the Toodoggone Formation. Volcanics of the McClair Member of the Toodoggone Formation, the Tango Creek Formation of the Sustut Group and a biotite-hornblende diorite to gabbro intrusion are found surrounding the Stik 4 showing. On a regional scale, the Adoogacho Member is described as consisting of trachydacite ash flow tuffs, lapilli and finer tuffs, volcanic sandstone and conglomerate, and subvolcanic plugs (Bulletin 86). Where evident at the Stik 4 showing the Adoogacho Member is comprised of a series of interbedded purple to grey crystal tuffs with rare purple agglomerate underlying the tuffs (Assessment Report 17237).

The Stik 4 showing consists of a north-trending silicified fracture zone cutting crystal tuffs. No sulphides were observed within this zone but pyrite, chalcopyrite and galena-bearing quartz float was discovered further downslope to the north. Several samples taken from this zone yielded anomalous silver. Sample GW-ST-9 analysed 32.91 grams per tonne silver and 0.045 gram per tonne gold; and sample GW-ST-10 analysed 4.62 grams per tonne silver and 0.014 gram per tonne gold (Assessment Report 17237, Map 2).

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 299-300; 1986, pp. 167-174; 1987, pp. 111,
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GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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Mineralization, Toodoggone River Area, North-Central British
Columbia, Unpub. Ph.D. Thesis, University of British Columbia
Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1178
REPORT: RGEN0100

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DATE CODED: 1992/12/10
DATE REVISED: 1993/05/19

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 222**

NATIONAL MINERAL INVENTORY:

NAME(S): **STIK 1**, STIK, STIK 1-5

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E12E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 36 34 N
LONGITUDE: 127 30 41 W
ELEVATION: 1860 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6386205
EASTING: 588942

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample GW-ST-14, from a quartz vein on the Stik 1 claim. The showing is located 10.75 kilometres northeast of the confluence of Adoogacho Creek with the Stikine River.

COMMODITIES: Lead Zinc Copper Silver

MINERALS

SIGNIFICANT: Pyrite Galena Sphalerite Chalcopyrite
ASSOCIATED: Quartz Barite
ALTERATION: Silica Clay
ALTERATION TYPE: Silicific'n Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
DIMENSION: 5 x 2 Metres STRIKE/DIP: 135/43W TREND/PLUNGE:
COMMENTS: A quartz vein is 1.5 to 2.3 metres wide and has been traced for 5 metres in broken outcrop. The vein strikes northwest and dips southwest. A quartz-barite zone is 20 metres long and 8 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Jurassic	Hazelton	Toodoggone	
ISOTOPIC AGE: 204 +/- 7 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite			
Cretaceous	Sustut	Tango Creek	
Lower Jurassic			Black Lake Suite

LITHOLOGY: Crystal Tuff
Agglomerate
Quartz Vein
Trachydacite Ash Flow Tuff
Lapilli Tuff
Volcanic Sandstone
Polymictic Conglomerate
Biotite Hornblende Gabbro
Biotite Hornblende Diorite
Siltstone

HOSTROCK COMMENTS: The age given is the oldest for the Adoogacho Member of the Toodoggone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist Zeolite

COMMENTS: Located in the northwest corner of the Toodoggone gold camp.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY: Silver GRADE: 6.2100 Grams per tonne

COMMENTS: Sample GW-ST-14, from the quartz vein.
REFERENCE: Assessment Report 17237.

CAPSULE GEOLOGY

The Stik 1 showing, a quartz vein with up to 1 per cent

CAPSULE GEOLOGY

disseminated pyrite and a quartz-barite zone in subcrop, is located 10.75 kilometres northeast of the confluence of Adoogacho Creek with the Stikine River and 16.25 kilometres northwest of the Alberts Hump prospect (094E 085). Smithers is 310 kilometres to the south.

The Stik 1 showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

Mapping has indicated that the Stik 1 showing is underlain by the Adoogacho Member of the Toodoggone Formation, the Tango Creek Formation of the Sustut Group and a biotite-hornblende diorite to gabbro intrusion. Volcanics of the McClair Member of the Toodoggone Formation, are found west the Stik 1 showing. Where evident at the Stik 1 showing the Adoogacho Member is comprised of a series of interbedded purple to grey crystal tuffs and rare purple agglomerate underlying the tuffs (Assessment Report 17237). The Tango Creek Formation is comprised of polymictic conglomerate, sandstone, shale and carbonaceous mudstone.

The Stik 1 showing consists of a quartz vein with up to 1 per cent disseminated pyrite, and a zone of quartz-barite in subcrop. The quartz vein is 1.5 to 2.3 metres wide, strikes northwest and dips 43 degrees southwest. It has been traced along strike for 5 metres in broken subcrop and appears to be hosted by a secondary zone of shearing. Sample GW-ST-14 analysed 6.21 grams per tonne silver. Similarly, sample 110915, taken 150 metres south of sample GW-ST-14, analysed 5.2 grams per tonne silver (Assessment Report 17237).

A zone of quartz-barite subcrop was found approximately 500 metres north of the quartz vein. A narrow zone is exposed on a cliff face and consists of two subparallel, southwest striking, quartz-barite veins with an overall exposed strike length of 20 metres. A crosscutting fault has displaced the veins near their southern ends. The system is traceable in quartz float and subcrop northward where it crops out in a second cliff. At this point the zone is 8 metres wide and consists of strongly silica and clay altered plagioclase porphyry hosting at least four subparallel quartz-barite veinlets cutting moderate to intense siliceous alteration. Fresh rock from this zone contained pyrite, up to 1 per cent galena and minor sphalerite. Along several silicified fractures, blebs of chalcopyrite were noted. From this point the zone is traceable for another 20 metres in float to the northwest. To date the best assay value reported from this zone is 1.03 grams per tonne silver and 0.014 gram per tonne gold (Assessment Report 17237).

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1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 299-300; 1986, pp. 167-174; 1987, pp. 111,
114-115; 1989, pp. 409-415; 1991, pp. 207-216
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EMPR ASS RPT 14465, 16087, *17237
EMPR MAP 61 (1985); 65 (1989)
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GSC BULL 270
GSC OF 306; 483

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N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
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MIN REV September/October, 1982; July/August, 1986
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Mineralization, Toodoggone River Area, North-Central British
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/12/10
DATE REVISED: 1992/12/10

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 223**

NATIONAL MINERAL INVENTORY:

NAME(S): **SLOCOMB 29**, SLOCOMB, SLOCOMB 3-11,
SLOCOMB 14-15, SLOCOMB 27-32, SLOCOMB 33-36,
SLOCOMB 37, SLOCOMB 45-50, HARMONNIE,
HARMONNIE 1-4

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 48 58 N
LONGITUDE: 126 18 18 W
ELEVATION: 1950 Metres

NORTHING: 6411425
EASTING: 660090

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample 27668 (Assessment Report 19583). The showing is located 7.0 kilometres south-southwest of Mount Slocomb and 4.75 kilometres east-southeast of Spinel Lake.

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite
ALTERATION: Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Disseminated
CLASSIFICATION: Skarn
TYPE: K02 Pb-Zn skarn

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE: Hadrynian
GROUP: Ingenika
FORMATION: Unnamed/Unknown Formation
IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Quartz Mica Schist
Marble
Pelitic Schist
Psammite
Calc-silicate
Meta Grit
Meta Quartzite
Para Gneiss
Amphibolite
Skarn

HOSTROCK COMMENTS: Lithologies in the footwall of the Sifton fault (Upper Plate) are thought to possibly be part of the Ingenika Group (GSC Bulletin 376).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Amphibolite
Greenschist

COMMENTS: Located immediately west of the Northern Rocky Mountain Trench.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N
CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
COMMODITY: Gold
GRADE: 1.2400 Grams per tonne

COMMENTS: Sample 27668, a 1-metre chip sample from a massive pyrrhotite and pyrite lens in quartz mica schist of unit Hlsm.
REFERENCE: Assessment Report 19583.

CAPSULE GEOLOGY

The Slocomb 29 showing is one of several areas of massive pyrrhotite and/or pyrite lenses hosted in quartz mica schist of unit Hlsm (Upper Plate rocks) and is also part of an anomalous gold soil and rock geochemistry zone. The showing falls along the trace of a normal fault near a klippe of impure marble of unit Hlq of the Hadrynian Ingenika Group (Assessment report 19583). The showing, is located 7.0 kilometres south-southeast of Mount Slocomb and 4.75

CAPSULE GEOLOGY

kilometres east-southeast of Spinel Lake, in the north-central Sifton Ranges of the Omineca Belt.

The Sifton Ranges lie within the northern Omineca Belt which is bound to the east by the Northern Rocky Mountain Trench and Foreland Belt, and to the west by the Intermontane Belt. The northern Omineca Belt is composed of Precambrian crystalline basement (185 Ma), mid-Paleozoic miogeoclinal strata and Paleozoic to Mesozoic volcanogenic rocks, which are in turn intruded by Cretaceous and younger plutons.

The core of the Sifton Ranges is a moderately inclined, west-verging, elongate and domed anticlinorium. Lithologies consist of Hadrynian Ingenika Group metaquartzite, paragneiss, marble and pelitic schist. Doming was caused by uplift in the mid-Cretaceous and Eocene. Mineral assemblages and geothermobarometry indicate amphibolite facies metamorphism. Synmetamorphic deformation resulted in a strong foliation parallel with the bedding which, in the Sifton Ranges, is isoclinally folded (Geological Survey of Canada Bulletin 376). The gently east-dipping Sifton fault truncates isoclinal and upright folds and metamorphic isograds. Movement on the Sifton fault postdates the peak of metamorphism (mid-Jurassic (?)) and predates the intrusion of Eocene granite. Hangingwall rocks have been tentatively included in the Ingenika Group, although their metamorphic and structural history differs from the footwall rocks. An undeformed Eocene granite cuts the Sifton fault at the south end of the Sifton Ranges (Assessment Report 19583).

Locally, the geology surrounding the Slocomb 29 showing is divided into two packages which are separated by the Sifton fault. Those in the footwall of the Sifton fault are part of the Lower Plate and those of the hangingwall are part of the Upper Plate. The Lower Plate rocks form the core of an antiform and consist of (from the core outward) rusty weathering metaquartzite (unit Hlq); paragneiss and pelitic schist (unit Hlp); pure marble and calcsilicate rock (unit Hlm); pelitic schist (unit Hlps); and pelitic schist, metagrit, psammite and marble (unit Hlg) (Geological Survey of Canada, Bulletin 376).

Limited exposures of Upper Plate stratigraphy are also evident at the Slocomb 29 showing. These include pure metaquartzite, amphibolite, minor pelitic schist, feldspathic metaquartzite, and paragneiss (unit Hlqa); quartz lens schist, psammite and marble (unit Hlsm); and rusty weathering pelitic schist, minor psammite, and marble (unit Hlws) (Geological Survey of Canada, Bulletin 376). For a more detailed description of each of these units from the Lower and Upper Plates refer to in Assessment Report 19583).

The greatest volume of sulphide mineralization is found in units Hlm and Hlg, on the west side of the antiform. Pyrrhotite and lesser pyrite occurs in thin lenses, 10 centimetres to rarely 1 metre thick, at marble/calcsilicate and marble schist contacts, and within calcsilicate rocks. The sulphides are predominantly associated with fine to medium-grained, dark green to black pyroxene skarn. The mineral content of the majority of the exposures varies from 10 to in excess of 80 per cent. Sphalerite, in minor quantities, is the most abundant economic sulphide. It is usually accompanied by argentiferous galena or, rarely, by chalcopyrite. Refer also to the various other Slocomb occurrences (094E 224-227).

Within unit Hlsm, three massive sulphide exposures were found. Elsewhere, minor disseminated pyrite was observed in rusty schist or quartz veins. Eleven samples were taken in the area of anomalous gold soil geochemistry. Three of these samples were taken from bedrock and analysed anomalous gold. The samples are along the trace of a normal fault near a klippe of impure marble of unit Hlq of the Ingenika Group (Assessment report 19583).

Sample 27668, a 1.0-metre chip sample taken from a massive pyrrhotite and pyrite lens hosted in quartz mica schist, analysed 1.24 grams per tonne gold. A second chip sample (27669) of altered schist over 0.6 metre analysed 1.05 grams per tonne (Assessment Report 19583).

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76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246; 80-1A, p. 348;
83-1A, pp. 221-227; 84-1A, pp. 105-108

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ENERGY AND MINERALS DIVISION

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GSC MAP 14-1973

DATE CODED: 1992/12/07
DATE REVISED: 1992/12/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 224**

NATIONAL MINERAL INVENTORY:

NAME(S): **SLOCOMB 11**, SLOCOMB, SLOCOMB 3-11,
SLOCOMB 14-15, SLOCOMB 27-32, SLOCOMB 33-36,
SLOCOMB 37, SLOCOMB 45-50, HARMONNIE,
HARMONNIE 1-4

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E16W
BC MAP:
LATITUDE: 57 51 03 N
LONGITUDE: 126 20 11 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location of Sample 27808 (Assessment Report 19583). The prospect is located 4.25 kilometres south-southwest of Mount Slocomb and 2.5 kilometres east of Spinel Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6415215
EASTING: 658073

COMMODITIES: Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Sphalerite Chalcopyrite Galena
COMMENTS: Sphalerite is accompanied by argentiferous galena and, rarely, chalcopyrite (Assessment Report 19583).
ALTERATION: Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated Podiform
CLASSIFICATION: Skarn
TYPE: K02 Pb-Zn skarn
DIMENSION: 1 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Pyrrhotite and pyrite occur in lenses 10 to 80 centimetres long and 10 to 100 centimetres thick.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Hadrynian Ingenika Undefined Formation

LITHOLOGY: Calc-silicate
Marble
Pelitic Schist
Meta Grit
Psammite
Meta Quartzite
Para Gneiss
Amphibolite
Feldspathic Meta Quartzite
Skarn

HOSTROCK COMMENTS: Lithologies in the footwall of the Sifton fault (Lower Plate) are thought to possibly be part of the Ingenika Group (GSC Bulletin 376).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Amphibolite
Greenschist

COMMENTS: Located immediately west of the Northern Rocky Mountain Trench.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 127.5400 Grams per tonne
Copper 0.1100 Per cent
Lead 1.6800 Per cent
Zinc 4.0900 Per cent
COMMENTS: Sample 27808, from a massive pyrrhotite and pyrite horizon in calc-silicate and impure marble of unit Hlg.
REFERENCE: Assessment Report 19583.

CAPSULE GEOLOGY

The Slocomb 11 prospect is one of several areas of sulphide mineralization as thin lens of pyrrhotite with lesser pyrite at marble/calcsilicate contacts and within calcsilicate rocks, within unit Hlm of the Ingenika Group. The prospect, is located 2.25 kilometres south of Mount Slocomb and 3.0 kilometres east of Spinel Lake, in the north-central Sifton Ranges of the Omineca Belt.

The Sifton Ranges lie within the northern Omineca Belt which is bound to the east by the Northern Rocky Mountain Trench and Foreland Belt, and to the west by the Intermontane Belt. The northern Omineca Belt is composed of Precambrian crystalline basement (185 Ma), mid-Paleozoic miogeoclinal strata and Paleozoic to Mesozoic volcanogenic rocks, which are in turn intruded by Cretaceous and younger plutons.

The core of the Sifton Ranges is a moderately inclined, west-verging, elongate and domed anticlinorium. Lithologies consist of Hadrynian Ingenika Group metaquartzite, paragneiss, marble and pelitic schist. Doming was caused by uplift in the mid-Cretaceous and Eocene. Mineral assemblages and geothermobarometry indicate amphibolite facies metamorphism. Synmetamorphic deformation resulted in a strong foliation parallel with the bedding which, in the Sifton Ranges, is isoclinally folded (Geological Survey of Canada Bulletin 376). The gently east-dipping Sifton fault truncates isoclinal and upright folds and metamorphic isograds. Movement on the Sifton fault postdates the peak of metamorphism (mid-Jurassic (?)) and predates the intrusion of Eocene granite. Hangingwall rocks have been tentatively included in the Ingenika Group, although their metamorphic and structural history differs from the footwall rocks. An undeformed Eocene granite cuts the Sifton fault at the south end of the Sifton Ranges (Assessment Report 19583).

Locally, the geology surrounding the Slocomb 11 prospect is divided into two packages which are separated by the Sifton fault. Those in the footwall of the Sifton fault are part of the Lower Plate and those of the hangingwall are part of the Upper Plate. The Lower Plate rocks form the core of an antiform and consist of (from the core outward) rusty weathering metaquartzite (unit Hlq); paragneiss and pelitic schist (unit Hlp); pure marble and calcsilicate rock (unit Hlm); pelitic schist (unit Hlps); and pelitic schist, metagrit, psammite and marble (unit Hlg) (Geological Survey of Canada, Bulletin 376).

Limited exposures of Upper Plate stratigraphy are also evident near the Slocomb 11 prospect. These include pure metaquartzite, amphibolite, minor pelitic schist, feldspathic metaquartzite, and paragneiss (unit Hlqa); quartz lens schist, psammite and marble (unit Hlsm); and rusty weathering pelitic schist, minor psammite, and marble (unit Hlws) (Geological Survey of Canada, Bulletin 376). For a more detailed description of each of these units from the Lower and Upper Plates, refer to Assessment Report 19583.

The greatest volume of sulphide mineralization is found in units Hlm and Hlg, on the west side of the antiform. Pyrrhotite and lesser pyrite occurs in thin lenses, 10 centimetres to rarely 1 metre thick, at marble/calcsilicate and marble schist contacts, and within calcsilicate rocks. The sulphides are predominantly associated with fine to medium-grained, dark green to black pyroxene skarn. The mineral content of the majority of the exposures varies from 10 to in excess of 80 per cent. Sphalerite, in minor quantities, is the most abundant economic sulphide. It is usually accompanied by argentiferous galena or, rarely, by chalcopyrite. Refer also to the various other Slocomb occurrences (094E 223-227).

Within unit Hlg, discontinuous lenses of disseminated to massive pyrrhotite and pyrite vary from 10 to 80 centimetres length and 10 to 100 centimetres thickness, hosted in calcsilicate rock with or without associated marble.

Sample 27808 was taken from a massive pyrrhotite and pyrite horizon within calcsilicate and impure marble of unit Hlg. Galena is reported from this sample. Analytical results from this sample were 4.09 per cent zinc, 1.68 per cent lead, 127.54 grams per tonne silver and 0.11 per cent copper (Assessment Report 19583). A second massive pyrrhotite and pyrite horizon with galena, 20 metres east, was also sampled with similar results. Sample 27815 analysed 2.33 per cent zinc, 1.28 per cent lead and 121.03 grams per tonne silver (Assessment Report 19583). Other massive pyrrhotite and pyrite horizons with sphalerite and/or galena occur 1 kilometre east-northeast near the contact between units Hlg and Hlps. Sample 92590, from one of these horizons analysed 2.52 per cent zinc, 1.31 per cent lead and 1223.43 grams per tonne silver (Assessment Report 19583).

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ENERGY AND MINERALS DIVISION

PAGE: 1187
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GSC OF 306; 483
GSC P 71-1A, pp. 23-26; 72-1A, pp. 26-32; 74-1A, pp. 13-16;
76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246; 80-1A, p. 348;
83-1A, pp. 221-227; 84-1A, pp. 105-108
GSC MAP 14-1973

DATE CODED: 1992/12/07
DATE REVISED: 1992/12/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 225**

NATIONAL MINERAL INVENTORY:

NAME(S): **SLOCOMB 101**, SLOCOMB, SLOCOMB 3-11,
SLOCOMB 14-15, SLOCOMB 27-32, SLOCOMB 33-36,
SLOCOMB 37, SLOCOMB 45-50, HARMONNIE,
HARMONNIE 1-4

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E16W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 52 06 N
LONGITUDE: 126 19 29 W
ELEVATION: 2050 Metres

NORTHING: 6417190
EASTING: 658689

LOCATION ACCURACY: Within 500M

COMMENTS: The location of Sample 27718 (Assessment Report 19583). The showing is located 2.25 kilometres south of Mount Slocomb and 3.0 kilometres east of Spinel Lake.

COMMODITIES: Lead Zinc Silver Copper

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Galena Sphalerite Chalcopyrite
ALTERATION: Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive Podiform
CLASSIFICATION: Skarn
TYPE: K02 Pb-Zn skarn
DIMENSION: 350 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Pyrrhotite and pyrite occur in thin lenses, 10 centimetres to, rarely, 1 metre thick and up to 350 metres long, associated with the marble members of unit Hlm (Assessment Report 19583).

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Hadrynian	Ingenika	Undefined Formation	

LITHOLOGY: Calc-silicate
Muscovite Schist
Meta Quartzite
Para Gneiss
Pelitic Schist
Marble
Meta Grit
Psammite
Amphibolite
Skarn

HOSTROCK COMMENTS: Lithologies in the footwall of the Sifton fault (Lower Plate) are thought to possibly be part of the Ingenika Group (GSC Bulletin 376).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Amphibolite
Greenschist

COMMENTS: Located immediately west of the Northern Rocky Mountain Trench.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 30.8600 Grams per tonne
Lead 9.5100 Per cent
Zinc 0.4600 Per cent

COMMENTS: Sample 27718, from a lens of 10 to 20 per cent pyrrhotite and pyrite in unit Hlm.

REFERENCE: Assessment Report 19583.

CAPSULE GEOLOGY

The Slocomb 101 showing is one of several areas of sulphide

CAPSULE GEOLOGY

mineralization as thin lens of pyrrhotite with lesser pyrite at marble/calcsilicate contacts and within calcsilicate rocks, within unit Hlm of the Ingenika Group. The showing, is located 2.25 kilometres south of Mount Slocomb and 3.0 kilometres east of Spinel Lake, in the north-central Sifton Ranges of the Omineca Belt.

The Sifton Ranges lie within the northern Omineca Belt which is bound to the east by the Northern Rocky Mountain Trench and Foreland Belt, and to the west by the Intermontane Belt. The northern Omineca Belt is composed of Precambrian crystalline basement (185 Ma), mid-Paleozoic miogeoclinal strata and Paleozoic to Mesozoic volcanogenic rocks, which are in turn intruded by Cretaceous and younger plutons.

The core of the Sifton Ranges is a moderately inclined, west-verging, elongate and domed anticlinorium. Lithologies consist of Hadrynian Ingenika Group metaquartzite, paragneiss, marble and pelitic schist. Doming was caused by uplift in the mid-Cretaceous and Eocene. Mineral assemblages and geothermobarometry indicate amphibolite facies metamorphism. Synmetamorphic deformation resulted in a strong foliation parallel with the bedding which, in the Sifton Ranges, is isoclinally folded (Geological Survey of Canada Bulletin 376). The gently east-dipping Sifton fault truncates isoclinal and upright folds and metamorphic isograds. Movement on the Sifton fault postdates the peak of metamorphism (mid-Jurassic (?)) and predates the intrusion of Eocene granite. Hangingwall rocks have been tentatively included in the Ingenika Group, although their metamorphic and structural history differs from the footwall rocks. An undeformed Eocene granite cuts the Sifton fault at the south end of the Sifton Ranges (Assessment Report 19583).

Locally, the geology surrounding the Slocomb 101 showing is divided into two packages which are separated by the Sifton fault. Those in the footwall of the Sifton fault are part of the Lower Plate and those of the hangingwall are part of the Upper Plate. The Lower Plate rocks form the core of an antiform and consist of (from the core outward) rusty weathering metaquartzite (unit Hlq); paragneiss and pelitic schist (unit Hlp); pure marble and calcsilicate rock (unit Hlm); pelitic schist (unit Hlps); and pelitic schist, metagrit, psammite and marble (unit Hlg) (Geological Survey of Canada, Bulletin 376).

Limited exposures of Upper Plate stratigraphy are also evident near the Slocomb 101 showing. These include pure metaquartzite, amphibolite, minor pelitic schist, feldspathic metaquartzite, and paragneiss (unit Hlqa); quartz lens schist, psammite and marble (unit Hlsm); and rusty weathering pelitic schist, minor psammite, and marble (unit Hlws) (Geological Survey of Canada, Bulletin 376). For a more detailed description of each of these units from the Lower and Upper Plates, refer to Assessment Report 19583.

The greatest volume of sulphide mineralization is found in units Hlm and Hlg, on the west side of the antiform. Pyrrhotite and lesser pyrite occurs in thin lenses, 10 centimetres to rarely 1 metre thick, at marble/calcsilicate and marble schist contacts, and within calcsilicate rocks. The sulphides are predominantly associated with fine to medium-grained, dark green to black pyroxene skarn. The mineral content of the majority of the exposures varies from 10 to in excess of 80 per cent. Sphalerite, in minor quantities, is the most abundant economic sulphide. It is usually accompanied by argentiferous galena or, rarely, by chalcopyrite. Semicontinuous exposures of disseminated and massive pyrrhotite and pyrite, up to 350 metres in length, are associated with the two marble members of unit Hlm. The two marble members are each 20 to 30 metres thick with about 20 metres of quartz mica schist and calcsilicate rocks between them. Refer also to the other Slocomb occurrences (094E 223-227).

Sample 27718 was taken between the two marble members of unit Hlm and consisted of 10 to 20 per cent pyrrhotite in calcsilicate +/- muscovite (+/- garnet) schist. Analytical results for this sample were 9.51 per cent lead, 0.46 per cent zinc and 30.86 grams per tonne silver (Assessment Report 19583).

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- EMPR MAP 65 (1989)
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- GSC BULL 12; 270; *376
- GSC OF 306; 483
- GSC P 71-1A, pp. 23-26; 72-1A, pp. 26-32; 74-1A, pp. 13-16;
76-1A, pp. 87-90; pp. 91-92; 77-1A, pp. 243-246; 80-1A, p. 348;
83-1A, pp. 221-227; 84-1A, pp. 105-108

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1190
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 14-1973

DATE CODED: 1992/12/07
DATE REVISED: 1992/12/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 226**

NATIONAL MINERAL INVENTORY:

NAME(S): **SLOCOMB 102**, SLOCOMB, SLOCOMB 3-11,
SLOCOMB 14-15, SLOCOMB 27-32, SLOCOMB 33-36,
SLOCOMB 37, SLOCOMB 45-50, HARMONNIE,
HARMONNIE 1-4

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E16W
BC MAP:
LATITUDE: 57 51 53 N
LONGITUDE: 126 19 55 W
ELEVATION: 2070 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location of Sample 27754 (Assessment Report 19583). The Slocomb 102 showing is located 2.75 kilometres south-southwest of Mount Slocomb and 2.5 kilometres east of Spinel Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6416771
EASTING: 658276

COMMODITIES: Zinc Copper

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Sphalerite Chalcopyrite
COMMENTS: Sphalerite is accompanied by argentiferous galena and, rarely, chalcopyrite (Assessment Report 19583). Mineral content varies from 10 to 80 per cent.
ALTERATION: Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated Podiform
CLASSIFICATION: Skarn
TYPE: K02 Pb-Zn skarn
DIMENSION: 1 x 1 Metres STRIKE/DIP:
COMMENTS: Pyrrhotite and pyrite occur in lenses, 10 to 80 centimetres long and 10 to 100 centimetres thick, in calcsilicate of unit Hlg (Assessment Report 19583). TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Hadrynian	Ingenika	Undefined Formation	

LITHOLOGY: Calc-silicate
Marble
Pelitic Schist
Meta Grit
Psammite
Meta Quartzite
Para Gneiss
Amphibolite
Feldspathic Meta Quartzite
Skarn

HOSTROCK COMMENTS: Lithologies in the footwall of the Sifton fault (Lower Plate) are thought to possibly be part of the Ingenika Group (GSC Bulletin 376).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Amphibolite Greenschist
COMMENTS: Located immediately west of the Northern Rocky Mountain Trench.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Grab
COMMODITY GRADE
Copper 0.1400 Per cent
Zinc 4.6900 Per cent
COMMENTS: Sample 27754, from a massive pyrrhotite and pyrite horizon in calc-silicate of unit Hlg.
REFERENCE: Assessment Report 19583.

CAPSULE GEOLOGY

The Slocomb 102 showing is one of several areas of sulphide mineralization as thin lens of pyrrhotite with lesser pyrite at marble/calcsilicate contacts and within calcsilicate rocks, within unit Hlm of the Ingenika Group. The showing, is located 2.25 kilometres south of Mount Slocomb and 3.0 kilometres east of Spinel Lake, in the north-central Sifton Ranges of the Omineca Belt.

The Sifton Ranges lie within the northern Omineca Belt which is bound to the east by the Northern Rocky Mountain Trench and Foreland Belt, and to the west by the Intermontane Belt. The northern Omineca Belt is composed of Precambrian crystalline basement (185 Ma), mid-Paleozoic miogeoclinal strata and Paleozoic to Mesozoic volcanogenic rocks, which are in turn intruded by Cretaceous and younger plutons.

The core of the Sifton Ranges is a moderately inclined, west-verging, elongate and domed anticlinorium. Lithologies consist of Hadrynian Ingenika Group metaquartzite, paragneiss, marble and pelitic schist. Doming was caused by uplift in the mid-Cretaceous and Eocene. Mineral assemblages and geothermobarometry indicate amphibolite facies metamorphism. Synmetamorphic deformation resulted in a strong foliation parallel with the bedding which, in the Sifton Ranges, is isoclinally folded (Geological Survey of Canada Bulletin 376). The gently east-dipping Sifton fault truncates isoclinal and upright folds and metamorphic isograds. Movement on the Sifton fault postdates the peak of metamorphism (mid-Jurassic (?)) and predates the intrusion of Eocene granite. Hangingwall rocks have been tentatively included in the Ingenika Group, although their metamorphic and structural history differs from the footwall rocks. An undeformed Eocene granite cuts the Sifton fault at the south end of the Sifton Ranges (Assessment Report 19583).

Locally, the geology surrounding the Slocomb 102 showing is divided into two packages which are separated by the Sifton fault. Those in the footwall of the Sifton fault are part of the Lower Plate and those of the hangingwall are part of the Upper Plate. The Lower Plate rocks form the core of an antiform and consist of (from the core outward) rusty weathering metaquartzite (unit Hlq); paragneiss and pelitic schist (unit Hlp); pure marble and calcsilicate rock (unit Hlm); pelitic schist (unit Hlps); and pelitic schist, metagrit, psammite and marble (unit Hlg) (Geological Survey of Canada, Bulletin 376).

Limited exposures of Upper Plate stratigraphy are also evident near the Slocomb 102 showing. These include pure metaquartzite, amphibolite, minor pelitic schist, feldspathic metaquartzite, and paragneiss (unit Hlqa); quartz lens schist, psammite and marble (unit Hlsm); and rusty weathering pelitic schist, minor psammite, and marble (unit Hlws) (Geological Survey of Canada Bulletin 376). For a more detailed description of each of these units from the Lower and Upper Plates, refer to Assessment Report 19583.

The greatest volume of sulphide mineralization is found in units Hlm and Hlg, on the west side of the antiform. Pyrrhotite and lesser pyrite occurs in thin lenses, 10 centimetres to rarely 1 metre thick, at marble/calcsilicate and marble schist contacts, and within calcsilicate rocks. The sulphides are predominantly associated with fine to medium-grained, dark green to black pyroxene skarn. The mineral content of the majority of the exposures varies from 10 to in excess of 80 per cent. Sphalerite, in minor quantities, is the most abundant economic sulphide. It is usually accompanied by argentiferous galena or, rarely, by chalcopyrite. Refer also to the other Slocomb occurrences (094E 223-227).

Within unit Hlg, discontinuous lenses of disseminated to massive pyrrhotite and pyrite vary from 10 to 80 centimetres in length and 10 to 100 in centimetres thickness, and are hosted in calcsilicate rock with or without associated marble.

Sample 27754 was taken from a massive pyrrhotite and pyrite horizon within calcsilicate of unit Hlg. The calcsilicate is bounded by impure marble and muscovite schist. Analytical results for this sample were 4.69 per cent zinc and 0.14 per cent copper (Assessment Report 19583).

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83-1A, pp. 221-227; 84-1A, pp. 105-108

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1193
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 14-1973

DATE CODED: 1992/12/07
DATE REVISED: 1992/12/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 227**

NATIONAL MINERAL INVENTORY:

NAME(S): **SLOCOMB 5**, SLOCOMB, SLOCOMB 3-11,
SLOCOMB 14-15, SLOCOMB 27-32, SLOCOMB 33-36,
SLOCOMB 37, SLOCOMB 45-50, HARMONNIE,
HARMONNIE 1-4

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E16W
BC MAP:
LATITUDE: 57 51 23 N
LONGITUDE: 126 18 49 W
ELEVATION: 1850 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location of Sample 27651 (Assessment Report 19583). The prospect is located 3.0 kilometres south-southeast of Mount Slocomb and 3.75 kilometres east of Spinel Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6415887
EASTING: 659400

COMMODITIES: Silver Zinc Lead Copper

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Sphalerite Galena Chalcopyrite
COMMENTS: Sphalerite is accompanied by argentiferous galena and, rarely, chalcopyrite (Assessment Report 19583). Mineral content varies from 10 to 80 per cent.
ALTERATION: Pyroxene
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive Podiform
CLASSIFICATION: Skarn
TYPE: K02 Pb-Zn skarn
DIMENSION: 350 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Pyrrhotite and pyrite occur in thin lenses, 10 centimetres to, rarely, 1 metre thick and up to 350 metres long associated with the marble members of unit Hlm (Assessment Report 19583).

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Hadrynian	Ingenika	Undefined Formation	

LITHOLOGY: Calc-silicate
Marble
Muscovite Schist
Meta Quartzite
Para Gneiss
Pelitic Schist
Meta Grit
Psammite
Amphibolite
Skarn

HOSTROCK COMMENTS: Lithologies in the footwall of the Sifton fault (Lower Plate) are thought to possibly be part of the Ingenika Group (GSC Bulletin 376).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Amphibolite
Greenschist
COMMENTS: Located immediately west of the Northern Rocky Mountain Trench.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
 SAMPLE TYPE: Grab

YEAR: 1990

COMMODITY	GRADE	
Silver	272.2300	Grams per tonne
Copper	0.1000	Per cent
Lead	1.5500	Per cent
Zinc	3.9700	Per cent

COMMENTS: Sample 27651, from a lens of pyrrhotite, pyrite and galena at the contact between unit Hlm and unit Hlp.

REFERENCE: Assessment Report 19583.

CAPSULE GEOLOGY

The Slocomb 5 prospect is one of several areas of sulphide mineralization as thin lens of pyrrhotite with lesser pyrite at marble/calcsilicate contacts and within calcsilicate rocks, within unit Hlm of the Ingenika Group. The prospect is located 3.6 kilometres south-southeast of Mount Slocomb and 3.75 kilometres east of Spinel Lake, in the north-central Sifton Ranges of the Omineca Belt.

The Sifton Ranges lie within the northern Omineca Belt which is bound to the east by the Northern Rocky Mountain Trench and Foreland Belt, and to the west by the Intermontane Belt. The northern Omineca Belt is composed of Precambrian crystalline basement (185 Ma), mid-Paleozoic miogeoclinal strata and Paleozoic to Mesozoic volcanogenic rocks, which are in turn intruded by Cretaceous and younger plutons.

The core of the Sifton Ranges is a moderately inclined, west-verging, elongate and domed anticlinorium. Lithologies consist of Hadrynian Ingenika Group metaquartzite, paragneiss, marble and pelitic schist. Doming was caused by uplift in the mid-Cretaceous and Eocene. Mineral assemblages and geothermobarometry indicate amphibolite facies metamorphism. Symmetamorphic deformation resulted in a strong foliation parallel with the bedding which, in the Sifton Ranges, is isoclinally folded (Geological Survey of Canada Bulletin 376). The gently east-dipping Sifton fault truncates isoclinal and upright folds and metamorphic isograds. Movement on the Sifton fault postdates the peak of metamorphism (mid-Jurassic (?)) and predates the intrusion of Eocene granite. Hangingwall rocks have been tentatively included in the Ingenika Group, although their metamorphic and structural history differs from the footwall rocks. An undeformed Eocene granite cuts the Sifton fault at the south end of the Sifton Ranges (Assessment Report 19583).

Locally, the geology surrounding the Slocomb 5 prospect is divided into two packages which are separated by the Sifton fault. Those in the footwall of the Sifton fault are part of the Lower Plate and those of the hangingwall are part of the Upper Plate. The Lower Plate rocks form the core of an antiform and consist of (from the core outward) rusty weathering metaquartzite (unit Hlq); paragneiss and pelitic schist (unit Hlp); pure marble and calcsilicate rock (unit Hlm); pelitic schist (unit Hlps); and pelitic schist, metagrit, psammite and marble (unit Hlg) (Geological Survey of Canada, Bulletin 376).

Limited exposures of Upper Plate stratigraphy are also evident near the Slocomb 5 prospect. These include pure metaquartzite, amphibolite, minor pelitic schist, feldspathic metaquartzite, and paragneiss (unit Hlqa); quartz lens schist, psammite and marble (unit Hlsm); and rusty weathering pelitic schist, minor psammite, and marble (unit Hlws) (Geological Survey of Canada, Bulletin 376). For a more detailed description of each of these units from the Lower and Upper Plates refer to in Assessment Report 19583).

The greatest volume of sulphide mineralization is found in units Hlm and Hlg, on the west side of the antiform. Pyrrhotite and lesser pyrite occurs in thin lenses, 10 centimetres to rarely 1 metre thick, at marble/calc-silicate and marble schist contacts, and within calc-silicate rocks. The sulphides are predominantly associated with fine to medium-grained, dark green to black pyroxene skarn. The mineral content of the majority of the exposures varies from 10 to in excess of 80 per cent. Sphalerite, in minor quantities, is the most abundant economic sulphide. It is usually accompanied by argentiferous galena or, rarely, by chalcopyrite. Semicontinuous exposures of disseminated and massive pyrrhotite and pyrite, up to 350 metres in length, are associated with the two marble members of unit Hlm. The two marble members are each 20 to 30 metres thick with about 20 metres of quartz mica schist and calcsilicate rocks between them. Refer also to the various other Slocomb occurrences in the area (094E 223-226).

The Slocomb 5 prospect consists of an upper and a lower zone. The lower zone consists of varying amounts of disseminated to massive

CAPSULE GEOLOGY

pyrrhotite and pyrite with galena and sphalerite in calcsilicate and muscovite schist, along the upper contact between units Hlm and Hlp. Sample 27651 was one of three samples taken at the upper contact of the upper pure marble member of unit Hlm and muscovite schist of unit Hlp, and consists of pyrrhotite, pyrite and galena. Assay results from this sample were 3.97 per cent zinc, 1.55 per cent lead, 0.10 per cent copper and 272.23 grams per tonne silver (Assessment Report 19583). Sample 27643, a 1.0-metre chip sample, analysed 1.62 per cent zinc, 0.24 per cent lead and 30.51 grams per tonne silver (Assessment Report 19583). Galena and sphalerite were noted in this sample.

The upper zone, 250 metres southeast of the lower zone, consists of pyrite or pyrrhotite with sphalerite hosted within calcsilicates of unit Hlm, near the lower pure marble member of unit Hlm. Three samples from this zone yielded anomalous zinc. The best of these, grab sample 27661, analysed 3.05 per cent zinc (Assessment Report 19583).

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83-1A, pp. 221-227; 84-1A, pp. 105-108
GSC MAP 14-1973

DATE CODED: 1992/12/07
DATE REVISED: 1992/12/07

CODED BY: KJM
REVISED BY: KJM

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The Jimo 24 area is underlain by Upper Triassic Takla Group basalts, trachyandesites, andesites, andesite dikes, tuffs and agglomerates. The units are locally sheared, fractured and brecciated. Ubiquitous chlorite and epidote are evidence of pervasive weak propylitic alteration.

Jimo 24 showing mineralization occurs at two areas. The southern zone is hosted within fractured coarse-grained trachyandesite feldspar porphyry. Extensive malachite staining is present along fracture surfaces. The fracture planes, striking north-south and dipping 85 degrees to the east, are lined by calcite with chalcopyrite haloes. The mineralization is exposed over a 100-metre area. A grab sample assayed 17.80 grams per tonne silver (Sample CA-14, Assessment Report 18465).

Six hundred to eight hundred metres north of this zone, at the north zone, malachite stained trachyandesite feldspar porphyry contains disseminated blebs of chalcopyrite up to 2 centimetres in diameter. Two samples of this material assayed 27.00 and 23.00 grams per tonne silver (Samples BB-16 and BB-17 respectively, Assessment Report 18465).

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DATE CODED: 1992/12/11
DATE REVISED: / /

CODED BY: WHH
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 229**

NATIONAL MINERAL INVENTORY:

NAME(S): **JM**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 38 45 N
LONGITUDE: 127 23 42 W
ELEVATION: 1620 Metres

NORTHING: 6390414
EASTING: 595800

LOCATION ACCURACY: Within 500M

COMMENTS: The location is centred on rock sample CS-51 (Assessment Report 18465, Map 1). The JM showing, discovered in 1988, is located 10 kilometres west of Mount McNamara and 10 kilometres northwest of Claw Mountain.

COMMODITIES: Copper Lead Silver

MINERALS

SIGNIFICANT: Chalcopyrite Chrysocolla Galena
ASSOCIATED: Pyrite Calcite
ALTERATION: Malachite Limonite Epidote Silica
ALTERATION TYPE: Oxidation Argillic Propylitic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
DIMENSION: 500 x 100 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimension given is the area over which mineralized rock samples were collected (Assessment Report 18465, Map 1).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Takla Undefined Formation

LITHOLOGY: Porphyritic Trachyandesite
Andesite
Fragmental Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Zeolite

INVENTORY

ORE ZONE: SOUTH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 1.0200 Grams per tonne
COMMENTS: Sample contained 1 per cent chalcopyrite and up to 5 per cent pyrite.
Sample only assayed for silver and gold.
REFERENCE: Sample CS-49, Assessment Report 18465.

ORE ZONE: NORTH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 0.7200 Grams per tonne
COMMENTS: The sample contained 10 per cent pyrite and 1 to 3 per cent chalcopyrite. The sample was only assayed for silver and gold.
REFERENCE: Sample CS-51, Assessment Report 18465.

CAPSULE GEOLOGY

The JM showing, discovered in 1988, is located 10 kilometres west of Mount McNamara and 10 kilometres northwest of Claw Mountain. The JM showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and

CAPSULE GEOLOGY

to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The JM showing is underlain Takla Group trachyandesites, andesites and fragmental andesites. Minor disseminated chalcopyrite, chrysocolla and galena, associated with blebs and stringers of pyrite, occur sporadically in all the units over a 500 by 100 metre area. Weak argillic and propylitic alteration is wide spread. Local areas of silicification with associated calcite veins occur in mineralized fragmental andesites. Limonite and malachite are well developed over the area. A sample of argillic, propylitic and siliceous limonitic trachyandesite with 10 per cent pyrite and 1 per cent chalcopyrite assayed 0.72 gram per tonne silver (Sample CS-51, Assessment Report 18465). A 4-metre wide limonitic trachyandesite with 5 per cent pyrite, 1 per cent chalcopyrite and trace malachite and chrysocolla, 500 metres to the south, assayed 1.02 grams per tonne silver (Sample CS-49, Assessment Report 18465).

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N MINER Oct.13, 1986
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
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DATE CODED: 1992/12/13
DATE REVISED: / /

CODED BY: WHH
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 230**

NATIONAL MINERAL INVENTORY:

NAME(S): **DR**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 38 51 N
LONGITUDE: 127 28 46 W
ELEVATION: 1780 Metres

NORTHING: 6390484
EASTING: 590756

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for the centre of the area of mineralized outcrops (Assessment Report 18465, Map 3). The showing is exposed on a north-trending ridge situated approximately 8 kilometres southeast of the confluence of the Chukachida and Stikine rivers.

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Bornite Pyrite Chalcopyrite Chalcocite
COMMENTS: Sample DR-29 contained up to 20 per cent bornite and 25 per cent pyrite.

ASSOCIATED: Quartz Calcite Chrysocolla Clay
ALTERATION: Epidote Malachite Oxidation Argillic
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Breccia
CLASSIFICATION: Epithermal Epigenetic
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 400 x 300 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions are for areal extent of mineralized outcrops.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	

LITHOLOGY: Brecciated Augite Porphyry Andesite
Brecciated Augite Porphyry Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Zeolite Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 136.0000 Grams per tonne
Copper 17.1000 Per cent
COMMENTS: Grab sample of quartz-calcite vein mineralized with up to 20 per cent bornite; the highest assay obtained.
REFERENCE: Sample DR-29, Assessment Report 18465.

CAPSULE GEOLOGY

The DR prospect, discovered in 1988, is exposed on a north trending ridge situated approximately 8 kilometres southeast of the confluence of the Chukachida and Stikine rivers. The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake

CAPSULE GEOLOGY

Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The DR prospect is underlain by Takla Group brecciated augite porphyry andesites and basalts. Mineralization, exposed in a number of outcrops scattered over an area of 400 by 300 metres, consists of bornite, pyrite, chalcocopyrite, chalcocite, malachite and chrysocolla hosted within quartz-calcite veins and veinlets. The volcanic associated with the mineralization is brecciated and argillically to propylitically altered.

Typical assay grades of the veins is 1.52 per cent copper and 13.50 grams per tonne silver (Sample WM-76, Assessment Report 18465). The highest assay obtained, 17.1 per cent copper and 136 grams per tonne silver, was from a 10-centimetre quartz-calcite vein containing up to 20 per cent bornite and 25 per cent pyrite (sample DR-29, Assessment Report 18465).

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Columbia, Ph.D. Thesis, University of Western Ontario

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CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 231**

NATIONAL MINERAL INVENTORY:

NAME(S): **DM, JR**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 38 13 N
LONGITUDE: 127 29 30 W
ELEVATION: 1860 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6389293
EASTING: 590053

LOCATION ACCURACY: Within 500M

COMMENTS: Location centred on the DM zone outcrop (Assessment Report 18465, Map 3). The showing, discovered in 1988, is exposed on a northeast-trending ridge situated approximately 8.5 kilometres southeast of the confluence of the Chukachida and Stikine rivers.

COMMODITIES: Silver Lead Copper Gold

MINERALS

SIGNIFICANT: Galena Tetrahedrite Chalcopyrite Pyrite
ASSOCIATED: Quartz Calcite Barite Pyrite
ALTERATION: Limonite Clay Malachite
ALTERATION TYPE: Argillic Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Breccia
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 80 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions given for the area of mineralized outcrops comprising the DM zone (Assessment Report 18465).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Brecciated Siliceous Andesite
Brecciated Siliceous Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 1480.0000 Grams per tonne
Gold 0.2000 Grams per tonne

COMMENTS: Grab sample of quartz-calcite material containing 10 per cent galena and tetrahedrite combined.

REFERENCE: Sample DM-103, Assessment Report 18465.

CAPSULE GEOLOGY

The DM prospect, discovered in 1988, is exposed on a northeast trending ridge situated approximately 8.5 kilometres southeast of the confluence of the Chukachida and Stikine rivers.

The prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake

CAPSULE GEOLOGY

Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toodoggone Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinial strata.

The DM prospect is comprised of two areas of mineralization: the DM zone and, 800 metres to the south-southeast, the JR zone. At both zones chalcopyrite, galena, tetrahedrite and pyrite occur in quartz-calcite-(barite) veins and veinlets hosted within argillically altered and brecciated Takla Group siliceous andesites and basalts. Locally malachite and limonite are well developed, especially along fracture surfaces. The DM zone is exposed in outcrops over an 80 by 50 metre area.

A grab sample (Sample DM-103, Assessment Report 18465) of a quartz-calcite vein containing 10 per cent combined disseminated galena and tetrahedrite, assayed 1480 grams per tonne silver and 0.2 gram per tonne gold. A grab sample (Sample JR-62, Assessment Report 18465) collected from a 15 centimetre wide quartz breccia vein on the JR zone assayed 1.1 grams per tonne gold and 36 grams per tonne silver.

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1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
EMPR FIELDWORK 1980, pp. 124-129; 1981, pp. 122-129, 135-141; 1982,
pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
291-293; 1985, pp. 299-300; 1986, pp. 167-174; 1987, pp. 111,
114-115; 1989, pp. 409-415; 1991, pp. 207-216
EMPR BULL 86
EMPR ASS RPT 15616, *18465
EMPR MAP 61 (1985); 65 (1989)
EMPR PF (Photogeologic Interpretation Map of the Northern Omineca
area, Oct. 1964, Canadian Superior Exploration Limited-in 94E
General File)
EMPR GEOLOGY 1977-1981, pp. 156-161
GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
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Mineralization, Toodoggone River Area, North-Central British
Columbia, Unpub. Ph.D. Thesis, University of British Columbia
Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toodoggone Formation, Toodoggone Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/12/07
DATE REVISED: 1992/12/16

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 232**

NATIONAL MINERAL INVENTORY:

NAME(S): **JIM**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 38 54 N
LONGITUDE: 127 24 54 W
ELEVATION: 3020 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6390665
EASTING: 594600

LOCATION ACCURACY: Within 500M

COMMENTS: Location is centred on rock sample CA-16 (Assessment Report 18465, Map 1). The Jim showing was discovered in 1988 along a high rugged ridge 11 kilometres west of Mount McNamara and 11 kilometres northwest of Claw Mountain.

COMMODITIES: Copper Silver Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena Covellite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Limonite
ALTERATION TYPE: Oxidation Leaching Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Disseminated Stratabound Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 2 Metres STRIKE/DIP: 160/80W TREND/PLUNGE:
COMMENTS: The attitude given is for the fracture zones, these zones are parallel to bedding and 1 to 2 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	

LITHOLOGY: Tuff
Feldspar Porphyry Trachyandesite
Andesite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab
COMMODITY: Silver GRADE: 27.0000 Grams per tonne
COMMENTS: The sample was only assayed for silver.
REFERENCE: Sample CA-17, Assessment Report 18465.

CAPSULE GEOLOGY

The Jim showing was discovered in 1988 along a high rugged ridge 11 kilometres west of Mount McNamara and 11 kilometres northwest of Claw Mountain.

The Jim showing is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins.

Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation,

CAPSULE GEOLOGY

Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Jim showing is underlain by 160 degree striking, Upper Triassic Takla Group, tuffs and trachyandesites locally intruded by andesite dikes. Localized shearing, striking 160 degrees and dipping 80 degrees west, contains 1 to 2-metre wide breccia zones with numerous quartz and quartz-calcite veinlets. Limonite is well developed within the breccia zones and in some of the tuffaceous horizons. Chalcopyrite, galena, covellite, and malachite occur as disseminations in some of the tuffs and in quartz and quartz-calcite veinlets associated with the shear zones.

A sample from a 2-metre wide breccia zone within trachyandesite feldspar porphyry assayed 148.0 grams per tonne silver (grab sample CA-15, Assessment Report 18465). A grab sample of a 2-metre wide limonitic tuff assayed 27.0 grams per tonne silver (Sample CA-17, Assessment Report 18465). The mineralized zones occur sporadically for 500 metres along the ridge crest.

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1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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GSC BULL 270
GSC OF 306; 483
GSC P 76-1A, pp. 87-90; 80-1A, pp. 27-32; 80-1B, pp. 207-211
GSC MAP 14-1973
W MINER April, 1982
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Jurassic Toodoggone Formation, Toodoggone Mining District, British
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DATE CODED: 1992/12/13
DATE REVISED: 1993/05/19

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 233**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER KING**

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E11W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 37 12 N
LONGITUDE: 127 19 42 W
ELEVATION: 1800 Metres

NORTHING: 6387635
EASTING: 599849

LOCATION ACCURACY: Within 500M

COMMENTS: The location is for the central area of the showing (Assessment Report 12871, Figure 6). The showing is situated on a north-trending ridge approximately 5.2 kilometres northwest of Claw Mountain.

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcocite Pyrite
ASSOCIATED: Quartz Calcite Hematite Magnetite
ALTERATION: Malachite Epidote Chlorite Clay Limonite

ALTERATION TYPE: Oxidation Propylitic Argillic Albitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Sheared Fractured
DIMENSION: 150 x 10 Metres STRIKE/DIP: 125/65N TREND/PLUNGE: 125/
COMMENTS: Dimensions describe the zone which contains many close-spaced veins.
The attitude given is for the veins, the trend is for the zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE: Upper Triassic GROUP: Takla FORMATION: Undefined Formation IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Porphyritic Andesite
Porphyritic Basalt
Agglomerate
Brecciated Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 43.8600 Grams per tonne
Gold 0.2500 Grams per tonne
Copper 3.9600 Per cent

REFERENCE: Sample 84-CK-31, Assessment Report 12871.

CAPSULE GEOLOGY

The Copper King prospect is situated on a north trending ridge approximately 5.2 kilometres northwest of Claw Mountain. Mineralization was first documented in the area in 1974 by Union Miniere Explorations and Mining Corporation Limited. The Copper King prospect is situated within a Mesozoic volcanic arc assemblage which lies along the eastern margin of the Intermontane Belt, a northwest-trending belt of Paleozoic to Tertiary sediments, volcanics and intrusions bounded to the east by the Omineca Belt and to the west and southwest by the Sustut and Bowser basins. Permian Asitka Group crystalline limestones are the oldest rocks exposed in the region. They are commonly in thrust contact with Upper Triassic Takla Group andesite flows and pyroclastic rocks. These Takla rocks have been intruded by plutons and other bodies of

CAPSULE GEOLOGY

the mainly granodiorite to quartz monzonite Early Jurassic Black Lake Suite and are in turn unconformably overlain by or faulted against Lower Jurassic calcalkaline volcanics of the Toadoggonne Formation, Hazelton Group.

The dominant structures in the area are steeply dipping faults which define a prominent regional northwest structural fabric trending 140 to 170 degrees. In turn, high angle, northeast-striking faults (approximately 060 degrees) appear to truncate and displace northwest-striking faults. Collectively these faults form a boundary for variably rotated and tilted blocks underlain by monoclinical strata.

The Copper King prospect is underlain by Takla Group porphyritic andesite, porphyritic basalt, agglomerates and tuffs. All of the units have undergone weak propylitic alteration; epidote and chlorite are ubiquitous. Hematite and magnetite are found disseminated throughout the volcanic units. Sheared and fractured zones are abundant and are associated with limonite and minor albite alteration of the wallrock.

The Copper King prospect consists of a zone of disseminated and fracture-vein controlled chalcocite, malachite and pyrite. The zone has a maximum dimension of 150 metres by 10 metres, trends 125 degrees and contains many close-spaced quartz-calcite veins and associated clay alteration. The veins have an approximate attitude of 120 to 125 degrees dipping 65 degrees to the north.

Four chip samples across 0.25 to 0.30 metre assayed an average of 2.43 per cent copper, 50 grams per tonne silver, and 0.09 grams per tonne gold (Samples 27, 28, 29, 30, Assessment Report 12871). A grab sample of this material assayed 43.86 grams per tonne silver, 0.25 gram per tonne gold, and 3.96 per cent copper (Sample 84-CK-31, Assessment Report 12871).

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1975-E166; 1976-E176
EMPR EXPL 1975-E163-E167; 1976-E175-E177; 1977-E216-E217;
1978-E244-E246; 1979-265-267; 1980-421-436; 1982-330-345;
1983-475-488; 1984-348-357; 1985-C349-C362; 1986-C388-C414;
1987-C328-C346; 1988-C185-C194
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pp. 125-127; 1983, pp. 137-138, 142-148; 1984, pp. 139-145,
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EMPR BULL 86
EMPR ASS RPT *5242, *12871
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GSC MAP 14-1973
W MINER April, 1982
N MINER Oct.13, 1986
N MINER MAG March 1988, p. 1
GCNL #23(Feb.1), 1985; #165(Aug.27), 1986
IPDM Nov/Dec 1983
ECON GEOL Vol. 86, pp. 529-554, 1991
MIN REV September/October, 1982; July/August, 1986
WIN Vol. 1, #7, June 1987
Forster, D.B. (1984): Geology, Petrology and Precious Metal
Mineralization, Toadoggonne River Area, North-Central British
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Diakow, L.J. (1990): Volcanism and Evolution of the Early and Middle
Jurassic Toadoggonne Formation, Toadoggonne Mining District, British
Columbia, Ph.D. Thesis, University of Western Ontario

DATE CODED: 1992/12/10
DATE REVISED: 1993/05/04

CODED BY: WHH
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 234**

NATIONAL MINERAL INVENTORY:

NAME(S): **JD-TARN**, JD-CROWN, TARN,
CROWN

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 25 24 N
LONGITUDE: 127 09 16 W
ELEVATION: 1880 Metres

NORTHING: 6366015
EASTING: 610829

LOCATION ACCURACY: Within 500M

COMMENTS: Sample number 145546, 3 kilometres north of Kadah Lake, about 240 kilometres north-northwest of Germansen Landing (Assessment Report 23663).

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Chalcopyrite Sphalerite
ASSOCIATED: Calcite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epithermal Epigenetic
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE

Lower Jurassic

GROUP

Hazelton

FORMATION

Toodoggone

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1994

SAMPLE TYPE: Grab

COMMODITY

GRADE

Silver	1939.0000	Grams per tonne
Gold	4.0100	Grams per tonne
Copper	0.0500	Per cent
Lead	0.8200	Per cent
Zinc	0.9100	Per cent

COMMENTS: High-grade grab.

CAPSULE GEOLOGY

The JD-Tarn showing is underlain by a thick succession of Lower Jurassic volcanics of the Toodoggone Formation, Hazelton Group. Agglomerate with calcite and vein stockwork less than 15 centimetres wide is mineralized with up to 5 per cent galena, 1 per cent chalcopyrite and traces of sphalerite with some malachite. A high grade grab sample analysed 4.01 grams per tonne gold, 1939 grams per tonne silver, 555 ppm copper, 8243 ppm lead and 9173 ppm zinc (Assessment Report 23663).

BIBLIOGRAPHY

EMPR ASS RPT 23663
EMPR BULL 86
GSC BULL 270
GSC OF 306; 483

DATE CODED: 1997/02/26
DATE REVISED: / /

CODED BY: GO
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 235**

NATIONAL MINERAL INVENTORY:

NAME(S): **JD-HAIRY, HAIRY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 28 59 N
LONGITUDE: 127 04 26 W
ELEVATION: 1800 Metres

NORTHING: 6372796
EASTING: 615478

LOCATION ACCURACY: Within 500M

COMMENTS: Sample 95-GB-8 located north-northwest of Mount Gordonia, about 247 kilometres north of Gernansen Landing (Assessment Report 24284).

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epithermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Toodoggone	

LITHOLOGY: Intermediate Mafic Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP:

GRADE:

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1995

COMMODITY	GRADE
Silver	143.2000
Gold	18.5000

GRADE	Units
143.2000	Grams per tonne
18.5000	Grams per tonne

REFERENCE: Assessment Report 24284.

CAPSULE GEOLOGY

A grab sample taken from quartz veins in silicified intermediate to mafic volcanics analysed 18.5 grams per tonne gold and 143.2 grams per tonne silver (Assessment Report 24284). The hostrocks are assumed to be part of the Lower Jurassic Toodoggone Formation, Hazelton Group.

BIBLIOGRAPHY

EMPR ASS RPT *24284
EMPR BULL 86
GSC BULL 270
GSC OF 306; 483
GCNL #239(Dec.13), 1995

DATE CODED: 1997/02/26
DATE REVISED: 1997/02/26

CODED BY: GO
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094E 236**

NATIONAL MINERAL INVENTORY:

NAME(S): **JD-CREEK, JM, CREEK,
TOODOGGONE, OREST**

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094E06E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 57 26 42 N
LONGITUDE: 127 11 26 W
ELEVATION: 1600 Metres

NORTHING: 6368369
EASTING: 608597

LOCATION ACCURACY: Within 500M
COMMENTS: Location of Creek Zone from Assessment Report 23663.

COMMODITIES: Gold Silver Copper Zinc Lead

MINERALS

SIGNIFICANT: Galena Chalcopyrite Sphalerite Pyrite
ASSOCIATED: Calcite Epidote Chlorite Quartz
ALTERATION: Epidote Hematite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Stockwork Massive
CLASSIFICATION: Epithermal Epigenetic Porphyry
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE Lower Jurassic GROUP Hazelton FORMATION Toodoggone IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Agglomerate
Tuff Breccia
Andesite
Lapilli Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Omineca Mountains

RELATIONSHIP: GRADE:

INVENTORY

ORE ZONE: CREEK REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1997
SAMPLE TYPE: Drill Core
COMMODITY GRADE

Silver	92.2000	Grams per tonne
Gold	100.5000	Grams per tonne
Copper	1.3400	Per cent
Lead	0.4600	Per cent
Zinc	11.7000	Per cent

COMMENTS: Width of 4 metres in core.
REFERENCE: Northern Miner, March 16, 1998.

CAPSULE GEOLOGY

The Creek zone is located 2.8 kilometres west-northwest of the Finn zone (094E 171). The JD-Creek area is underlain by a thick succession of Lower Jurassic volcanics of the Toodoggone Formation, Hazelton Group. The Creek Zone is mineralized with galena, chalcopyrite and sphalerite. A 4-metre drill intersection assayed 100.5 grams per tonne gold, 92.2 grams per tonne silver, 1.34 per cent copper, 0.46 per cent lead and 11.7 per cent zinc (Northern Miner, March 16, 1998).

Americas Gold Corp. (AGC) and Antares Mining and Exploration Corp. drilled in 1997 and 1998 (7 holes, 1038 metres). Seven of 8 holes intersected auriferous quartz-carbonate veins and stockwork zones. Drilling encountered a new zone called the Orest; a 5-metre intersection returned 2.40 grams per tonne gold (GCNL #181 (Sept.21) 1998).

AGC acquired all the Toodoggone properties in July 1999. AGC is a subsidiary of Timebeat.com Enterprises Inc. Antares became Canesa Capital Corporation in September 1999.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1212
REPORT: RGEN0100

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1998
N MINER Dec. 1,15, 1997; March 16, July 13, 1998
PR REL AGC Americas Gold Corp., Jan.6, Sept.17, 1998; Antares Mining
and Exploration Corporation, June 30, 1998
WWW <http://www.agcgold.com>
Placer Dome File

DATE CODED: 1998/03/19
DATE REVISED: 1998/03/19

CODED BY: LDJ
REVISED BY: LDJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **ERN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 05 51 N
LONGITUDE: 124 33 01 W
ELEVATION: 1960 Metres

NORTHING: 6329306
EASTING: 406075

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of West zone (Assessment Report 14012, Map 3).

COMMODITIES: Zinc Lead Barite

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena Barite

COMMENTS: Dolomite breccias are healed by massive pyrite.

ASSOCIATED: Barite

MINERALIZATION AGE: Lower Silurian

DEPOSIT

CHARACTER: Breccia Stratabound Massive
CLASSIFICATION: Exhalative Sedimentary Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Folded

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Paleozoic Road River Unnamed/Unknown Formation

LITHOLOGY: Brecciated Dolomite
Brecciated Pyritic Quartzite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: WEST

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1980

SAMPLE TYPE: Chip

COMMODITY

GRADE

Zinc

8.0000

Per cent

COMMENTS: From a 0.35-metre chip sample.

REFERENCE: Assessment Report 14012.

CAPSULE GEOLOGY

The Ern area is underlain by a northwest trending, folded and faulted sequence of Cambrian to Mississippian sediments and carbonates.

Two areas of barite, sphalerite, and galena mineralization (the Ern East and West zones) are hosted within massive pyrite-healed dolomite-quartzite breccias. The breccias form part of a basal turbidite sequence of the Ordovician to Devonian Road River Group. The turbidites were deposited into a basin in which exhalative activity was occurring.

A 0.35-metre chip sample from the West zone assayed 8.00 per cent zinc and only very minor lead (Assessment Report 14012).

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EMPR PRE MAP 38
GSC MAP 1701A
GSC OF 483
CIM EMGJ Vol.1, No.1, pp. 1-20, 1992

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GEOLOGICAL SURVEY BRANCH
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PAGE: 1214
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/09

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 002**

NATIONAL MINERAL INVENTORY: 094F2 Cu1

NAME(S): **WEDGE**, PROTECTION, COPPER KING

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094F02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 02 48 N
LONGITUDE: 124 36 06 W
ELEVATION: 1800 Metres

NORTHING: 6323720
EASTING: 402829

LOCATION ACCURACY: Within 1 KM

COMMENTS: Centre of claim group (Mineral Claim Map 094F02E, 1992).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Malachite
ASSOCIATED: Quartz Ankerite
ALTERATION: Quartz Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Tabular
DIMENSION: 1525 x 1 Metres
COMMENTS: Strikes 140 degrees west dipping steeply west. STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian	Undefined Group	Lynx	

LITHOLOGY: Siliceous Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

CAPSULE GEOLOGY

The Wedge copper showing occurs along Pesika Creek, an area of geologically complex faulted terrane. A succession of Lower Cambrian orthoquartzite, quartzose dolomite, dolomite, and shale are unconformably overlain by uniformly-bedded, grey weathering, nodular limestone of Upper Cambrian Lynx Formation. Cambrian to Ordovician Kechika Group argillaceous limestone conformably overlies the Lynx Formation.

The Wedge showing consists of a large quartz vein hosting variable amounts of pyrite, chalcopyrite and malachite. The vein is over 1525 metres long, and in places is over 30 metres in width. Over much of the strike length, the vein occurs as a series of narrow reticulating veins that have completely or partly silicified the surrounding rock. Occasional ankerite veins have also been noted in association with narrow quartz veins. The host rock is reported to be fine-grained, grey limestone, probably part of the Lynx Formation.

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DATE CODED: 1985/07/24
DATE REVISED: 1992/04/09

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 003**

NATIONAL MINERAL INVENTORY: 094F13 Zn1

NAME(S): **SPA, STAG, RED,
SPRINGIRON LAKE, GATAGA RIVER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F13E
BC MAP:
LATITUDE: 57 57 44 N
LONGITUDE: 125 44 06 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Gossan (Assessment Report 10578, Figure 7).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6427779
EASTING: 338193

COMMODITIES: Zinc Barite Vanadium Silver Uranium
 Iron

MINERALS

SIGNIFICANT: Sphalerite Barite Sulvanite Hydrozincite Melanterite
ASSOCIATED: Pyrite
ALTERATION: Limonite Hematite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratiform Disseminated
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
SHAPE: Irregular
DIMENSION: 350 x 100 x 6 Metres STRIKE/DIP: 135/00 TREND/PLUNGE:
COMMENTS: Dimensions are for the largest Gossan, attitude is from a VLF conductor underlying the gossan.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Devonian Earn Undefined Formation

LITHOLOGY: Black Shale
 Graphitic Shale
 Barite
 Siltstone
 Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1973
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 100.0000 Grams per tonne
Uranium 0.0080 Per cent
Vanadium 0.0200 Per cent
Zinc 3.0000 Per cent

COMMENTS: Sample of gossan.
REFERENCE: Geological Survey of Canada Economic Geology 27, page 49.

CAPSULE GEOLOGY

The area of the Spa showing is underlain by black shales and fine-grained clastic sediments of the Devonian to Mississippian Earn Group. A spring of water, apparently emanating from a west dipping thrust fault, appears to create hematite sinters and limonitic gossans. The gossan forms a coating up to 6 metres thick, over a northwest trending 350 by 100-metre area, with smaller patches nearby. Hydrozincite and melanterite occur on fractures within the underlying shale. Stratiform barite and disseminated sulvanite form a black carbonate layer in the shale.

The gossan has a high iron (over 10 per cent) and zinc (up to 3 per cent) content. It also contains up to 0.01 per cent copper, 0.01 per cent nickel, 100 grams per tonne silver, 0.008 per cent uranium, and 0.02 per cent vanadium (Geological Survey of Canada Economic Geology Report 27).

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EMPR MAP 22,#59
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/13

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 004**

NATIONAL MINERAL INVENTORY: 094F15 Cu1

NAME(S): **FRAM**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F15E 094K03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 59 53 N
LONGITUDE: 124 36 36 W
ELEVATION: 2167 Metres

NORTHING: 6429628
EASTING: 404834

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of vein outcrop (Assessment Report 2875, Map 1).

COMMODITIES: Copper Silver Lead

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Galena Pyrite

ASSOCIATED: Quartz Carbonate

ALTERATION: Chlorite Actinolite Epidote

COMMENTS: Contact skarn along dyke boundaries

ALTERATION TYPE: Skarn

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound

CLASSIFICATION: Epigenetic Hydrothermal Skarn

TYPE: I06 Cu±Ag quartz veins

SHAPE: Tabular

MODIFIER: Faulted

DIMENSION: 300 x 152 x 2 Metres STRIKE/DIP: 170/90

TREND/PLUNGE:

COMMENTS: The strike and dip is the general attitude for The main vein. The vein is 900 metres long, the dimensions given above are for the best mineralized portion.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Helikian

Undefined Group

Aida

LITHOLOGY: Argillite
Argillaceous Dolomite
Diabase Dike
Gabbro Dike

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

METAMORPHIC TYPE: Contact

RELATIONSHIP: Pre-mineralization

GRADE:

INVENTORY

ORE ZONE: MAIN VEIN

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1970

SAMPLE TYPE: Chip

COMMODITY

GRADE

Copper

7.0000

Per cent

COMMENTS: Assays are from a composite of 7 2-metre chip samples.

REFERENCE: Assessment Report 2875.

CAPSULE GEOLOGY

The Fram copper showings are hosted in Helikan Aida Formation argillaceous dolomites and argillites, intruded by gabbro and diabase dykes. These sediments form the core of the Muskwa Anticlinoria and are unconformably overlain by Cambrian quartzite and dolomite. Thrust faults, trending northwest, sub-parallel the bedding attitudes of the sediments.

Copper mineralization (bornite, chalcocite, and chalcopyrite) occurs along dyke margins (in chlorite-actinolite-epidote-skarns), in fault zones (associated with galena), and most importantly in quartz-carbonate veins.

The main zone of copper mineralization consists of bornite and chalcopyrite in a quartz-carbonate vein that can be traced along strike for 900 metres and 152 metres vertically. The vein is terminated at the north end by a major northeast trending fault and dyke swarms. The northern 300 metres of the vein has the best

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CAPSULE GEOLOGY

mineralization. An assay of 7.0 per cent copper was derived from a composite of seven 2-metre chip samples, silver values in the samples varied from 3.43 to 65.14 grams per tonne (Assessment Report 2875). Pyrite occurs as disseminations in the vein and as streaks and lenses in the surrounding argillite and dolomite.

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GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/09

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 005**

NATIONAL MINERAL INVENTORY: 094F16 Cu1

NAME(S): **BLUE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F16E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 56 24 N
LONGITUDE: 124 07 19 W
ELEVATION: 1550 Metres

NORTHING: 6422581
EASTING: 433574

LOCATION ACCURACY: Within 500M

COMMENTS: Centred on Zone 3 trenches (Assessment Report 19124, Drawing 4).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Pyrite
ALTERATION: Malachite Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Breccia Stratabound Podiform
CLASSIFICATION: Replacement Epigenetic Hydrothermal
TYPE: E02 Kipushi Cu-Pb-Zn
SHAPE: Irregular
COMMENTS: Mineralization is hosted at the hinge of an anticline.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cambrian	Atan	Unnamed/Unknown Formation	

LITHOLOGY: Dolomite
Brecciated Quartzite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1971
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Copper 2.5700 Per cent
COMMENTS: Drill intersection of nine metres.
REFERENCE: Assessment Reports 19124 and 21437.

CAPSULE GEOLOGY

The Blue showings, exposed in Grayling Creek valley, are underlain by Cambrian to Silurian platformal sequence of carbonates, quartzites and siltstones.
Lower Cambrian Atan Group dolomites and quartzites are conformably overlain by Cambrian and Ordovician Kechika Group arenaceous dolomites and limestones, which in turn, are conformably overlain by Silurian Nonda Formation siltstones.
The Blue showings are made up of three zones called Zone 1, Zone 2 and Zone 3, respectively. Bornite, chalcopyrite and pyrite occur as irregular massive replacement bodies, fracture-fillings, and open space-fillings hosted within recrystallized dolomite and brecciated quartzite of the Atan Group.
Drill hole intersections from Zone 3 give 9 metres of 2.570 per cent copper and 5 grams per tonne silver (Assessment Report 21437).

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DATE CODED: 1985/07/24
DATE REVISED: 1992/04/09

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 006**

NATIONAL MINERAL INVENTORY: 094F12 W1

NAME(S): **FOX PASS**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 38 05 N
LONGITUDE: 125 56 54 W
ELEVATION: 1000 Metres

NORTHING: 6391870
EASTING: 323988

LOCATION ACCURACY: Within 1 KM

COMMENTS: From location description in Geological Survey of Canada, Economic
Geology, Number 17, page 61.

COMMODITIES: Copper Tungsten Molybdenum

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite Scheelite Molybdenite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Concordant
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE: Upper Proterozoic
GROUP: Ingenika
FORMATION: Swannell
IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Garnet Gneiss
Limestone
Granite
Quartz Monzonite
Amphibolite
Quartzite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Cassiar Mountains

RELATIONSHIP: GRADE: Amphibolite

CAPSULE GEOLOGY

The Fox Pass area is underlain by flat-lying Upper Proterozoic Swannell Formation (Ingenika Group) amphibolite, quartzite, gneiss and limestone, intruded by Tertiary granites and quartz monzonites. Pyrrhotite, pyrite, chalcopyrite, scheelite and molybdenite are contained in some of the bands of garnet gneiss and interlayered limestone, and in crosscutting quartz-carbonate veins.

BIBLIOGRAPHY

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GSC OF 483

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/09

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 007**

NATIONAL MINERAL INVENTORY: 094F8 Cu1

NAME(S): **AKIE RIVER**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F08W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 15 46 N
LONGITUDE: 124 23 39 W
ELEVATION: 2199 Metres

NORTHING: 6347498
EASTING: 415909

LOCATION ACCURACY: Within 1 KM

COMMENTS: The site location is the peak separating the headwaters of the Ospika and Aikie rivers (Topographical map 094F08W).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Cambrian-Ordovician
Silurian

GROUP

Kechika
Undefined Group

FORMATION

Unnamed/Unknown Formation
Nonda

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Argillaceous Limestone
Argillite
Quartzite
Siltstone

HOSTROCK COMMENTS: The Kechika Group is the most voluminous unit in the area.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The area between the Akie and Ospika rivers is underlain by Cambrian to Ordovician Kechika Group argillaceous limestones and argillites. Conformably overlying the Kechika Group on the ridge separating the two rivers is an unnamed Upper Ordovician quartzite unit and Silurian Nonda Formation siltstone.

Small "copper veins" are reported to occur between the headwaters of the Ospika and Aikie rivers. The host unit is unknown.

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DATE CODED: 1985/07/24
DATE REVISED: 1992/04/09

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 008**

NATIONAL MINERAL INVENTORY: 094F11 Zn1

NAME(S): **CIRQUE**, STRONSAY, SOUTH CIRQUE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094F11E 094F06E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)

LATITUDE: 57 30 35 N
LONGITUDE: 125 09 36 W
ELEVATION: 1630 Metres

NORTHING: 6376186
EASTING: 370597

LOCATION ACCURACY: Within 500M

COMMENTS: The centre of the deposit is between Kwadacha and Paul rivers, 11.25 kilometres southeast from the summit of Mount Yuen, 29 kilometres east-northeast from the village of Ware (Assessment Report 9460).

COMMODITIES: Zinc Lead Silver

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena Barite
ASSOCIATED: Barite Quartz Carbonate
COMMENTS: Minor quartz and carbonate.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Exhalative Syngenetic
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 1000 x 300 x 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Cirque deposit; thickness ranges from 2 to 60 metres.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Gunsteel	
Devonian-Mississipp.	Earn	Akie	

LITHOLOGY: Carbonaceous Siliceous Shale
Porcellanite
Calcareous Siltstone
Chert
Calcareous Shale
Silty Shale
Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: CIRQUE REPORT ON: Y
CATEGORY: Measured YEAR: 1995
QUANTITY: 18500000 Tonnes
COMMODITY GRADE
Lead 2.2000 Per cent
Zinc 8.1000 Per cent
COMMENTS: Estimated mineable reserves with a stripping ratio of 7.3 to 1.
REFERENCE: Mining Review Winter 1996/97, page 32.

ORE ZONE: NORTH REPORT ON: Y
CATEGORY: Indicated YEAR: 1991
QUANTITY: 24700000 Tonnes
COMMODITY GRADE
Lead 2.3000 Per cent
Zinc 8.5000 Per cent
Silver 50.8000 Grams per tonne
COMMENTS: Mine Development Certificate issued to Curragh Inc., December 1992.
REFERENCE: EMPR INF CIRC 1994-1, page 14.

CAPSULE GEOLOGY

Upper Devonian to Mississippian Earn Group rocks are preserved in a series of synformal fold keels and thrust plates that form

CAPSULE GEOLOGY

sinuous, semi-continuous northwest trending belts. This package overlies and is overthrust by strata belonging to the Cambrian-Ordovician Kechika Group and Ordovician-Silurian Road River Group. The Devonian-Mississippian section can be split into four main subdivisions. The Lower to Middle Devonian limestones and shales are characterized by massive, grey, fossiliferous limestone (Kwadacha and Pesika reefs), limestone debris flows and chert breccias that interfinger laterally with graptolitic shales, cherts, and distal calcareous turbidites (Paul River Formation).

The Akie Formation (Earn Group) comprises rusty brown and grey-weathering shale, silty shale and siliceous shale which unconformably overlie the Lower to Middle Devonian strata. Some shales which have been mapped as Akie Formation may be facies equivalents of the Lower to Middle Devonian units, or basal shales of the Gunsteel Formation (Earn Group). An unconformity between the top of the Silurian and the base of the Upper Devonian is indicated in drill core by the conglomeratic, reworked top of Silurian siltstone of the Road River Group. The duration and regional nature of the unconformity are poorly understood. The problem is complicated by depositional thickness and facies change in Lower to Middle Devonian strata and lack of paleontologic control.

The Gunsteel Formation overlies the Akie Formation and consists of silvery-grey weathering, black, siliceous, carbonaceous shale and chert. The Gunsteel Formation is host for known barite-sulphide mineralization and most of the known stratiform barite deposits in the region.

The Warneford Formation (Earn Group) comprises Upper Devonian to Lower Mississippian submarine fans of chert and shale conglomerates in the west, interbedded to the east with silty, distinctly laminated shales which have thin dolomitic siltstone interbeds. The Warneford Formation is interbedded with and overlies the Gunsteel Formation. It locally contains nodular and bedded barite that may be stratigraphically equivalent to the barite in the Gunsteel Formation.

The Cirque occurrence is underlain by strata of the Earn Group (Warneford, Gunsteel, Akie formations). The Gunsteel Formation is the primary host of the Cirque deposit and is characterized by black, carbonaceous, locally pyritic, siliceous shale and ribbon-bedded porcellanite approximately 140 metres thick. The porcellanite members occur at the upper and lower contacts and are 10-20 metres thick. The Akie Formation consists of soft, grey, laminated shales and in the vicinity of the Cirque deposit is interbedded with it. It contains minor calcareous siltstone and intraformational siltstone breccia beds, some of which are also found within the ore deposit. The Warneford Formation, which consists of coarse sandstone and chert pebble conglomerate interbedded with grey to black shale, is not prevalent.

The Cirque deposit is a plunging, elongate, east tapering, lensoid body 1000 metres long, 300 metres wide and 2-60 metres thick. It dips 30-45 degrees to the southwest and plunges 30 degrees to the south. In plan view the deposit extends north-south, with the up plunge end truncated by the present day erosion surface. The orebody lies along the southwest dipping limb of a northwest trending anticline and is cut by normal faults.

The deposit consists of three facies; a barite-rich facies fringed by pyritic and laminar banded pyritic facies. The baritic facies consists of fine to medium-grained barite and less than 40 per cent sulphides, with the sulphides occurring as 1-5 millimetre thick laminations of pyrite, sphalerite, and to a smaller degree galena. By comparison, the pyritic facies, which grades into the baritic facies, contains from 40 to 100 per cent sulphides comprised of pyrite, sphalerite and galena, in a gangue of barite with minor amounts of quartz and carbonate. The laminar banded pyritic facies consists of 0.1 to 20-centimetre thick beds of fine framboidal pyrite in a siliceous shale. The sphalerite, galena and barite occur as sparsely disseminated grains in these layers.

Overall, the pyritic facies dominates in the northern part of the deposit and the baritic facies in the southern part, with the laminar banded pyritic facies occurring to the east and above the baritic and pyritic facies. The ore grade of the laminar banded facies is low, constituting only a minor part of the total lead-zinc-silver reserve.

Diluted mineable reserves at Cirque are reported to total 22,084,000 tonnes grading 9.4 per cent zinc, 2.8 per cent lead and 60 grams per tonne silver (Application for Mine Development (Stage 1 Report), Cirque Project, Curragh Resources Inc. January 1991).

The Cirque deposit formed within a fault-bounded sub-basin or trough which had restricted seawater circulation. This hypothesis is based on the assumption that the anomalous thickening of the Gunsteel Formation is a primary depositional feature. Interbeds of coarse,

CAPSULE GEOLOGY

poorly sorted conglomerate or breccia within the southern part of the massive barite horizon suggests the inferred bounding blocks were tectonically active during the main pulse of mineralization. The thickness and lensoidal shape of the barite-rich horizon and general lack of pelitic interbeds is consistent with Sato's (1972) model of accumulation of dense metalliferous brines in a seafloor depression and subsequent rapid crystallization. The reported occurrence of ammonites within the barite further supports a syngenetic origin for the deposit. A period of alternating pelitic sedimentation and syngenetic to early diagenetic crystallization of pyrite followed the main episode of barite precipitation and was apparently restricted to the same basin of deposition. It is suggested that the source fluids for both types of mineralization emanated from rift zones bounding this basin (Fieldwork 1979).

In December 1992, Curragh Inc. was issued a Mine Development Certificate for its Stronsay (Cirque) lead-zinc-silver project. At a daily milling rate of 3500 tonnes the company estimated that the project would produce about 250,000 tonnes of zinc and lead sulphide concentrates yearly. Reserves (1997) in the North orebody are estimated at 24.7 million tonnes grading 2.3 per cent lead, 8.5 per cent zinc, and 50.8 grams per tonne silver (Information Circular 1994-1, page 14).

A prefeasibility study completed in 1995, examined the viability of an open-pit operation. Mineable reserves were estimated at 18.5 million tonnes averaging 8.1 per cent zinc and 2.2 per cent lead, with a stripping ratio of 7.3 to 1 (Mining Review Winter 1996/97, page 32).

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1996-1, p. 13
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EMPR OF 1992-1; 1994-1
EMPR PF (*Prospectus, Curragh Resources Inc.-July 1989; GCNL #29,
1981; MacIntyre, D. (1986): Brief on Cirque Lead-Zinc Deposit in
Northeast B.C.; *Cyprus Anvil (1981): Information Summary Akie
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EMR MIN BULL MR 223 B.C. 271
EMR MP CORPFILE (Cyprus Anvil Mining Corporation; Hudson's Bay Oil
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GSC P 79-1A
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CIM Special Volume *37, pp. 71-86
GCNL #192(Oct.4), 1991; #100 (May 25), 1992
MIN REV Winter 1996/97, p. 32
N MINER Oct.28, 1991; Jan.27, June 1, Dec.28, 1992
W MINER Feb. 1983, p. 15
WWW <http://www.infomine.com/>
Gorzynski, G.A. (1986): Geology and Lithogeochemistry of the Cirque
Stratiform Sediment-Hosted Ba-Zn-Pb-Ag Deposit, Northeastern
British Columbia, M.Sc. Thesis, University of British Columbia
Chevron File
EMPR OF 1998-10
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1997/04/30

CODED BY: GSB
REVISED BY: TGS

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094F 009**

NATIONAL MINERAL INVENTORY: 094F7 Pb2

NAME(S): **FLUKE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F07W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 24 21 N
LONGITUDE: 124 54 57 W
ELEVATION: 1752 Metres

NORTHING: 6364184
EASTING: 384896

LOCATION ACCURACY: Within 500M

COMMENTS: Centred on drill hole 80-F-04 (Assessment Report 9219, Map 2).

COMMODITIES: Lead Zinc Silver Barite

MINERALS

SIGNIFICANT: Pyrite Galena Sphalerite Barite
MINERALIZATION AGE: Upper Devonian
ISOTOPIC AGE: 362 +/-1 Ma DATING METHOD: Fossil MATERIAL DATED: Conodonts

DEPOSIT

CHARACTER: Stratiform Massive Stratabound
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Folded Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Earn Gunsteel

LITHOLOGY: Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1979
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 7.0000 Grams per tonne
Lead 1.9100 Per cent
Zinc 1.9000 Per cent

COMMENTS: Lead and zinc values are actually 3.81 per cent combined. Assay values are from 1-metre chip samples of massive mineralization.

REFERENCE: Assessment Report 7270.

CAPSULE GEOLOGY

Stratiform pyrite-galena-sphalerite mineralization is hosted within northwest trending, southwest dipping, Upper Devonian Gunsteel Formation shales of the Devonian and Mississippian Earn Group. The shale unit is terminated to the southwest by steep imbricate thrust sheets of Silurian Nonda Formation siltstone and Cambrian to Ordovician Kechika Group limestone. Chip samples across one metre of mineralization assayed 3.81 per cent lead and zinc combined and 7 grams per tonne silver (Assessment Report 7270). Four diamond-drill holes, collared to test down dip extension of the surface showing, failed to intersect mineralization at depth. Drill logs indicate highly faulted and tightly folded stratigraphy (Assessment Report 9219).

Conodont biostratigraphy has bracketed the age of mineralization between Middle and Upper Famennian (upper-most Upper Devonian).

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EMPR BULL 103
EMPR EXPL 1979-268; 1980-440
EMPR Pre. Map 38
GSC OF 483; 606
CIM EMGJ Vol.1, No.1, pp. 1-20, 1992
MacIntyre, D.G. (1980): Geologic Setting of Recently Discovered

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1227
REPORT: RGEN0100

BIBLIOGRAPHY

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Chevron File
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/13

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **CT, CUT**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F01W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 06 07 N
LONGITUDE: 124 17 48 W
ELEVATION: 1680 Metres

NORTHING: 6329480
EASTING: 421449

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of Cut zone (Assessment Report 11561, Plate 3).

COMMODITIES: Zinc Lead Barite

MINERALS

SIGNIFICANT: Barite Pyrite Sphalerite Galena
ASSOCIATED: Quartz Carbonate Calcite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown
Carbonate

DEPOSIT

CHARACTER: Stratiform Stratabound Massive
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Folded Faulted
DIMENSION: 250 x 3 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Paleozoic Road River Unnamed/Unknown Formation

LITHOLOGY: Dolomite
Siliceous Mudstone
Baritic Siltstone
Shale
Turbidite
Mafic Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1980
SAMPLE TYPE: Chip
COMMODITY Zinc GRADE 11.0000 Per cent

COMMENTS: Chip sample collected over 2.5-metres.
REFERENCE: Assessment Report 9243.

CAPSULE GEOLOGY

The CT property is underlain by a thick succession of Ordovician to Devonian Road River Group rocks consisting of black graphitic-graptolitic shales, black pyritic mudstones, dolomites, arenite (siltstone) turbidites and mafic volcanic flows.

The mineralization forms a discrete stratigraphic horizon within the upper portion of this package. Overlain by a finely laminated baritic siltstone, the mineralization consists of a massive pyrite and sphalerite base, dolomite-pyrite-sphalerite breccia in the centre and massive barite and sphalerite at the top. The whole sequence averages 3 metres in width, and can be traced 250 metres along strike. A 2.5-metre chip sample, from a trench on the "Cut zone", graded 11.0 per cent zinc. (Assessment Report 9243).

Underlying this zone is dolomite with quartz-carbonate veins containing minor galena and sphalerite. This overlies a mudstone with 1-centimetre wide sphalerite and 10-centimetre wide pyrite lenses. Beneath the mudstone, dolomite hosts barite veins and sphalerite-galena bearing quartz-carbonate veins. The whole sequence, from top of the mineralized zone to the bottom of the dolomite, varies from 24 to 15 metres in thickness.

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REPORT: RGEN0100

CAPSULE GEOLOGY

Cominco Exploration Ltd. drilled the property in 1996.

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EMPR ASS RPT *9243, *9900, 11561
EMPR BULL 103
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CIM EMGJ Vol. 1, No. 1, pp. 1-20, 1992
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/03

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 011**

NATIONAL MINERAL INVENTORY: 094F7 Pb1

NAME(S): **ELF**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F07E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)

LATITUDE: 57 18 16 N
LONGITUDE: 124 42 33 W
ELEVATION: 1300 Metres

NORTHING: 6352569
EASTING: 397027

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of massive mineralized outcrop in Elf Creek valley
(Assessment Report 7303, Map 4).

COMMODITIES: Lead Zinc Barite Silver

MINERALS

SIGNIFICANT: Galena Sphalerite Barite Pyrite

MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Massive Stratabound Stratiform
CLASSIFICATION: Sedimentary Syngenetic Exhalative Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Folded Faulted

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Earn Gunsteel

LITHOLOGY: Carbonaceous Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Elf area is underlain by a northwest trending belt of Mississippian to Devonian Earn Group shales unconformably overlying Ordovician to Devonian Road River Group rocks and Cambrian to Ordovician Kechika Group limestone.

Massive stratified barite, with galena, sphalerite, and pyrite, interbedded with black shales of the Upper Devonian Gunsteel Formation (lower Earn Group), outcrops on the west side of Elf Creek valley. The mineralized horizon is at least 4 metres thick. Diamond drill holes (10) failed to extend the zone along strike.

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EMPR EXPL 1978-E246; 1979-328
EMPR FIELDWORK 1979, pp. 55-74; 1980 pp. 33-45
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CIM EMGJ Vol.1, No.1, pp. 1-20, 1992
Chevron File
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1992/04/10

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRAYLING**

MINING DIVISION: Omineca

STATUS: Showing
 REGIONS: British Columbia
 NTS MAP: 094F16E
 BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 58 26 N
 LONGITUDE: 124 04 39 W
 ELEVATION: 1310 Metres

NORTHING: 6426311
 EASTING: 436265

LOCATION ACCURACY: Within 500M

COMMENTS: Trench locations (Assessment Report 19124, Drawing 4).

COMMODITIES: Copper Silver Nickel Cobalt Platinum

MINERALS

SIGNIFICANT: Pyrite Bornite Chalcopyrite Pyrrhotite Tetrahedrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform
 CLASSIFICATION: Replacement Epigenetic Hydrothermal
 SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian-Ordovician	Kechika	Unnamed/Unknown Formation	

LITHOLOGY: Sandy Dolomite
 Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
 TERRANE: Ancestral North America

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1989
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Silver	27.8000 Grams per tonne
Cobalt	0.5600 Per cent
Copper	1.7000 Per cent
Nickel	0.5000 Per cent

COMMENTS: Traces of platinum (0.06 grams per ton) were also noted in the samples.

REFERENCE: Assessment Report 19124.

CAPSULE GEOLOGY

The Grayling showing, exposed in Grayling Creek valley, is underlain by a Cambrian to Silurian platformal sequence of carbonates, quartzites and siltstones.

Lower Cambrian Atan Group dolomites and quartzites are conformably overlain by Cambrian to Ordovician Kechika Group arenaceous dolomites and limestones, which, in turn, are conformably overlain by Silurian Nonda Formation siltstones.

The Grayling showing consists of irregular pods of massive pyrite, bornite, chalcopyrite, pyrrhotite, minor marcasite and tetrahedrite. These pods, up to 40 centimetres thick and traceable for up to 40 metres along bedding planes, are hosted within tightly-packed sandy dolomite of the Kechika Group. Grab samples of massive sulphide material grade 1.70 per cent copper, 0.50 per cent nickel, 0.56 per cent cobalt, 27.8 grams per tonne silver, and contain anomalous platinum values (Assessment Report 19124).

BIBLIOGRAPHY

EM GEOFILE 2000-2; 2000-5
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 EMPR GEM 1970-62; 1971-72,75
 GSC OF 606

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1232
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 79-1A, p. 228

DATE CODED: 1992/03/07
DATE REVISED: 1992/04/23

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **YULE** ACTIVE

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F11E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 34 49 N
LONGITUDE: 125 14 43 W
ELEVATION: 1600 Metres

NORTHING: 6384204
EASTING: 365749

LOCATION ACCURACY: Within 500M

COMMENTS: Center of "Active zone" along Christmas Creek (Assessment Report 9798, G-7597).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite Pyrite

MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Stratiform	Massive	Stratabound	
CLASSIFICATION: Sedimentary	Exhalative	Syngenetic	Industrial Min.
SHAPE: Tabular			
MODIFIER: Folded			

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Devonian	Earn	Gunsteel	

LITHOLOGY: Carbonaceous Siliceous Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The area of the Yule showing is underlain by sediments of the Middle Devonian to Mississippian Earn Group, which are structurally overlain by imbricate thrust sheets of Silurian and older shales, clastics and cherts. Blebby and laminated pyrite and barite are hosted in carbonaceous, siliceous shale of the Upper Devonian Gunsteel Formation (lower Earn Group), informally referred to as the "Active zone".

BIBLIOGRAPHY

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EMPR BULL 103
EMPR EXPL 1979-328
EMPR PRE MAP 38
GSC OF 483; 606
CIM EMGJ Vol.1, No.1, pp. 1-20
WWW <http://www.infomine.com/index/properties/YN-YUEN-NOEL.html>

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/28

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 014**

NATIONAL MINERAL INVENTORY:

NAME(S): **WATERFALL**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F16E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 56 57 N
LONGITUDE: 124 05 57 W
ELEVATION: 1390 Metres

NORTHING: 6423580
EASTING: 434939

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Assessment Report 19124, Drawing 4).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Pyrite Bornite Chalcopyrite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Breccia Disseminated
CLASSIFICATION: Replacement Epigenetic Hydrothermal
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cambrian	Atan	Unnamed/Unknown Formation	

LITHOLOGY: Brecciated Pyritic Quartzite
Mafic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1990

COMMODITY
Silver
Copper

GRADE	Grams per tonne
2.5000	Per cent
15.2000	

REFERENCE: Assessment Report 21437.

CAPSULE GEOLOGY

The Waterfall showing is exposed in Grayling Creek valley, an area underlain by a Cambrian to Silurian platformal sequence of carbonates, quartzites and siltstones.

Lower Cambrian Atan Group dolomites and quartzites, intruded by mafic dykes, are conformably overlain by Cambrian to Ordovician Kechika Group arenaceous dolomites and limestones, and Silurian Nonda Formation siltstones.

Mineralization consists of disseminated and massive pyrite, with variable amounts of bornite and chalcopyrite, within a gossanous, pyritic, and brecciated quartzite of the lower Atan Group. Assays of the mineralization graded 15.2 per cent copper and 2.5 grams per tonne silver (Assessment Report 21437).

BIBLIOGRAPHY

EMPR GEM 1970-62, 1971-72,75
EMPR ASS RPT *12594, *19124, *21437
GSC OF 606
GSC P 79-1A, p. 228

DATE CODED: 1992/03/09
DATE REVISED: 1992/04/10

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 015**

NATIONAL MINERAL INVENTORY: 094F11 Pb1

NAME(S): **MOUNT ALCOCK**

MINING DIVISION: Omineca

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094F11W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 39 53 N
LONGITUDE: 125 24 03 W
ELEVATION: 1630 Metres

NORTHING: 6393920
EASTING: 356783

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of barite kill zone (Assessment Report 19829, Map 3).

COMMODITIES: Zinc Lead Silver Barite

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena Barite
COMMENTS: Bands of pyrite, sphalerite and galena are hosted within massive barite.

MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Stratiform Massive Stratabound
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 230 x 130 x 20 Metres STRIKE/DIP: 135/80W TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Earn	Gunsteel	

LITHOLOGY: Carbonaceous Siliceous Shale
Massive Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1989
SAMPLE TYPE:	Drill Core		
COMMODITY	GRADE	Grams per tonne	Per cent
Silver	23.3276		
Lead	3.1900		
Zinc	3.7000		

COMMENTS: From an 11-metre intersection in DDH-AK 89-9.

REFERENCE: Assessment Report 19829, Map 19.

CAPSULE GEOLOGY

The Mount Alcock area is underlain by a fault-bounded wedge of Devonian to Mississippian Earn Group shales surrounded by Ordovician to Devonian Road River Group siltstones.

In a saddle, on the north side of Mount Alcock, a 230 metre long, 20 metre wide, curvilinear body of barite, containing bands of pyrite, galena and sphalerite, forms a prominent white-kill zone. The barite is hosted within Upper Devonian Gunsteel Formation shales (lower Earn Group).

Drilling indicates that the body is terminated at a depth of 130 metres by a northeast trending fault. A representative drill core assay is 3.7 per cent zinc, 3.19 per cent lead, and 23.3276 grams per tonne silver over 11 metres (Assessment Report 19829).

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EMPR PF (MacIntyre, D.G. (1979): Northeast British Columbia, Report on the Geology of the Southwest Corner of the Kwadacha Wilderness Park and Mt. Alcock Ba-Pb-Zn-Ag showing.)

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1236
REPORT: RGEN0100

BIBLIOGRAPHY

CIM EMGJ Vol.1, No.1, pp. 1-20, 1992
GCNL #85 (May 1), 1992
N MINER July 23, 1990; May 25, 1992
WWW <http://www.infomine.com/>
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/02

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **GNOME** DBA1, DBA2,
DBA3

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 14 26 N
LONGITUDE: 124 33 27 W
ELEVATION: 1500 Metres

NORTHING: 6345238
EASTING: 406001

LOCATION ACCURACY: Within 500M
COMMENTS: Centred on Dba3 zone trenching (Assessment Report 9722, Plate 3).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite Pyrite
MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Stratiform Massive Stratabound
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Earn Gunsteel

LITHOLOGY: Carbonaceous Siliceous Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The stratigraphy of the Gnome area is characterized by tight northwest trending anticlinal and synclinal folds, west dipping thrust faults, and steep normal faults. A panel of Devonian to Mississippian Earn Group shales are in fault contact with Ordovician to Devonian Road River sediments and carbonates.

Three barite horizons (Dba1, Dba2, and Dba3) and a massive pyrite horizon are hosted within carbonaceous siliceous shales of the Upper Devonian Gunsteel Formation (lower Earn Group).

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EMPR EXPL 1980-81
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GSC OF 483; 606
GSC P 1979-1A, RPT 37 and 38
CIM EMGJ Vol.1, No.1, pp.1-20, 1992
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1992/02/26

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 017**

NATIONAL MINERAL INVENTORY:

NAME(S): **GIN**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 11 51 N
LONGITUDE: 124 30 26 W
ELEVATION: 1850 Metres

NORTHING: 6340378
EASTING: 408929

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of massive barite horizon (Assessment Report 11562, Figure 83).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
ALTERATION: Quartz Carbonate
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Stratiform Massive Stratabound
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E17 Sediment-hosted barite
SHAPE: Tabular
MODIFIER: Folded
COMMENTS: Massive barite horizon trends northwest and dips 40 degrees southwest.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Earn	Gunsteel	

LITHOLOGY: Carbonaceous Siliceous Shale
Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

A three-metre wide bed of massive barite occurs in the silvery grey-weathering, carbonaceous and siliceous shales of the Upper Devonian Gunsteel Formation (Devonian to Mississippian Earn Group). The barite horizon trends northwest and dips forty degrees southwest. Quartz-carbonate veins are present in the underlying Ordovician to Devonian Road River Group siltstones.

BIBLIOGRAPHY

EMPR ASS RPT *8369, *11562
EMPR BULL 103
EMPR P 1991-4
EMPR PRE MAP 38
Chevron File
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/02

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 018**

NATIONAL MINERAL INVENTORY:

NAME(S): DEL

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 20 12 N
LONGITUDE: 125 00 48 W
ELEVATION: 1600 Metres

NORTHING: 6356656
EASTING: 378811

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of "West" barite zone (Assessment Report 14177, Plate 2).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
MINERALIZATION AGE: Upper Devonian
ISOTOPIC AGE:

DATING METHOD: Fossil

MATERIAL DATED: Crinoids

DEPOSIT

CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

Massive
Exhalative

Stratabound
Syngenetic

Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Earn	Gunsteel	

LITHOLOGY: Shale

HOSTROCK COMMENTS: Crinoids used to bracket age of mineralization to Upper Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Del property is underlain by a northwest trending thrust panel of Cambrian to Devonian stratigraphy. Oldest to youngest, the rocks are limestone and phyllite of the Cambrian to Ordovician Kechika Group, overlain by shale, silty limestone, siltstone and dolomite of the Ordovician to Devonian Road River Group, which are in turn, overlain by siliceous shale and mudstone of the Devonian to Mississippian Earn Group. A horizon of bedded barite (the West zone) occurs within Upper Devonian shales of the lower Earn Group (Gunsteel Formation).

BIBLIOGRAPHY

EMPR ASS RPT *9672, *11557, *14177
EMPR BULL 103
EMPR EXPL 1983-489
EMPR Pre Map 38
GSC OF 483: 606
CIM EMGJ Vol.1, No.1, pp.1-20, 1992
EMPR OF 2000-22

DATE CODED: 1985/10/09
DATE REVISED: 1992/03/04

CODED BY: AFW
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **GREY PEAK**, KECHIKA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F14E
BC MAP:

MINING DIVISION: Omineca
Liard
UTM ZONE: 10 (NAD 83)

LATITUDE: 57 47 59 N
LONGITUDE: 125 12 06 W
ELEVATION: 1950 Metres

NORTHING: 6408541
EASTING: 369149

LOCATION ACCURACY: Within 500M

COMMENTS: Located in the Grey Peak area within Kwadacha Park. (Stratigraphic Section Location, Geological Survey of Canada, Paper 79-1A, page 220).

COMMODITIES: Phosphate Uranium

MINERALS

SIGNIFICANT: Fluorapatite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Cambrian-Ordovician

GROUP

Kechika

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Phosphorite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1979

SAMPLE TYPE: Grab

COMMODITY

GRADE

Uranium 0.0220 Per cent

COMMENTS: A phosphorite sample with 8.0 per cent fluorapatite.

REFERENCE: Geological Survey of Canada, Paper 79-1A, page 398.

CAPSULE GEOLOGY

Thin phosphorite beds occur at 5 horizons in the upper 100 metres of a nodular limestone unit of the Cambrian to Ordovician Kechika Group. Phosphate is present as microcrystalline coatings, 1 to 10 millimetres thick, around limestone nodules, and as phosphatized fossil debris (trilobites) in beds 5 to 50 centimetres thick. Some pelletal and oolitic phosphate is also present. Phosphatic beds are easily recognized by their blue-weathering surfaces and black colour, contrasting with the pale grey of the host limestone. Phosphatic coatings, 1 millimetre or less thick, surround limestone nodules in beds 2 or more metres thick. Phosphate is also reported to be present in the lower banded limestone unit. It occurs as thin (1 to 5 centimetres) sea floor pavements with up to 25 per cent fluorapatite. A phosphorite sample with 8 per cent fluorapatite assayed 0.022 per cent uranium (Geological Survey of Canada, Paper 79-1A).

BIBLIOGRAPHY

EMPR FIELDWORK *1988, pp. 397-410
Butrenchuk, S.B., *Phosphate in British Columbia (EMPR Paper in Press)
GSC P *79-1A, pp. 219-226, 397-399; 79-1B, p. 256
GSC OF 483; 551

DATE CODED: 1987/08/20
DATE REVISED: 1992/03/27

CODED BY: LDJ
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 020**

NATIONAL MINERAL INVENTORY: 094F10 Ba1

NAME(S): **KWADACHA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F10W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 38 32 N
LONGITUDE: 124 58 43 W
ELEVATION: 1850 Metres

NORTHING: 6390602
EASTING: 381892

LOCATION ACCURACY: Within 500M

COMMENTS: Central barite outcrop along ridge south of George's Peak
(Assessment Report 20949, Figure 4b).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite Pyrite

ALTERATION: Silica

COMMENTS: Early silica exhalative activity increased silica content of underlying units.

ALTERATION TYPE: Silicific'n

MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER:	Stratiform	Massive	Stratabound	
CLASSIFICATION:	Sedimentary	Exhalative	Syngenetic	Industrial Min.
TYPE:	E17 Sediment-hosted barite			
SHAPE:	Tabular			
MODIFIER:	Folded	Faulted		

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Earn	Gunsteel	

LITHOLOGY: Shale
Siliceous Argillite
Chert

HOSTROCK COMMENTS: The Earn Group ranges from Devonian to Mississippian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Kwadacha barite deposit occurs near the top of a rhythmically bedded black chert, shale, and siliceous argillite sequence of the Upper Devonian Gunsteel Formation (Earn Group). The Barite zone is 1 to 30 metres thick and consists of massive to finely laminated barite with thin argillaceous partings. Barite varies from light grey to white at the bottom, to dark grey at the top. The underlying argillites have been silicified to chert by silica precipitation during early exhalative activity. The cherts and argillites contain thin laminae of pyrite.

Imbricate thrust faults and folding has structurally repeated the barite horizon, which forms resistant weathering outcrops along the crest of a northwest trending ridge south of George's Peak.

BIBLIOGRAPHY

EMPR ASS RPT *20949
EMPR BULL 103
EMPR FIELDWORK *1981, pp. 149-155
EMPR P 1991-4, pp. 25-86
EMPR PRE MAP 38
CIM EMGJ *Vol.1, No.1, p. 12, 1992
EMPR OF 2000-22

DATE CODED: 1990/01/04
DATE REVISED: 1992/04/12

CODED BY: SBB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **NORTH KWAD**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F13E 094F12E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 45 59 N
LONGITUDE: 125 33 06 W
ELEVATION: Metres

NORTHING: 6405562
EASTING: 348214

LOCATION ACCURACY: Within 500M

COMMENTS: Located 25 kilometres east of the Fox River and 10 kilometres north of the Warneford River.

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Podiform	Stratiform	Stratabound	
CLASSIFICATION: Sedimentary	Exhalative	Syngenetic	Industrial Min.
TYPE: E17	Sediment-hosted barite		
SHAPE: Tabular			

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Devonian	Earn	Gunsteel	

LITHOLOGY: Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

A 3000 metre section of Paleozoic clastics in the North Kwad area, ranging from Cambrian to Mississippian, is exposed in a series of imbricate, northwest trending, northeast converging, thrust sheets. Competent Cambrian to Ordovician Kechika Group dolomite and siltstone and Silurian Nonda Formation siltstone form the resistant ridges of the overthrust plates, while Ordovician to Devonian Road River Group shale and siltstone, and Devonian to Mississippian Earn Group shales form the less resistant and heavily folded footwall sections.

Barite lenses and baritic shale horizons occur within the Upper Devonian Gunsteel Formation of the Devonian to Mississippian Earn Group.

BIBLIOGRAPHY

EMPR ASS RPT *10224
EMPR EXPL 1980-442
EMPR OF 2000-22

DATE CODED: 1990/01/19
DATE REVISED: 1992/04/12

CODED BY: SBB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 022**

NATIONAL MINERAL INVENTORY: 094F7 Ba1

NAME(S): **SIKA**, AIKIE-SIKA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F07E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)

LATITUDE: 57 26 55 N
LONGITUDE: 124 41 06 W
ELEVATION: 1640 Metres

NORTHING: 6368578
EASTING: 398881

LOCATION ACCURACY: Within 500M

COMMENTS: Centred on massive pyrite horizon (Assessment Report 9911, Plate 3).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite Pyrite
MINERALIZATION AGE: Ordovician-Silurian

DEPOSIT

CHARACTER: Stratiform Massive Stratabound
CLASSIFICATION: Sedimentary Exhalative Industrial Min.
TYPE: E17 Sediment-hosted barite
DIMENSION: 7000 x 1 Metres STRIKE/DIP:
COMMENTS: The dimension given is the possible strike length for the one-metre thick barite bed.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Paleozoic	Road River	Unnamed/Unknown Formation	

LITHOLOGY: Siltstone
Shale
Quartzite

HOSTROCK COMMENTS: Turbidite unit of the middle Road River Group.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Sika area is underlain by folded and faulted Paleozoic platformal carbonates and basinal sediments. The western portion of the area is underlain by a synclinally folded sequence of Cambrian to Ordovician Kechika Group carbonates and Ordovician to Devonian Road River Group shale and siltstone. This sequence is overthrust, to the east, onto a narrow panel of Road River Group shale, siltstone and quartzite. This panel, in turn, overthrusts onto a synclinally folded, conformable package of Ordovician to Devonian Road River Group shale and siltstone and Devonian to Mississippian Earn Group shale and argillite. Barite mineralization occurs within the Road River Group turbidites and within the Upper Devonian shales of the Earn Group (Gunsteel Formation).

A grey barite bed, one metre thick, occurs at the top of a 110-metre thick quartzite-siltstone turbidite unit of Upper Ordovician to Lower Silurian age (middle Road River Group). The barite horizon is present at several localities and may have a possible strike length of 7 kilometres. Upper Devonian Gunsteel Formation shales (lower Earn Group) host nodular to almost massive barite and a 30-centimetre thick massive pyrite horizon.

BIBLIOGRAPHY

EMPR ASS RPT *8339, *9911
EMPR BULL 103
MacIntyre, D.G. (1980): Geologic Setting of Recently Discovered Shale-Hosted Barite-Lead-Zinc Occurrences Northwest British Columbia, Paper presented at CIM District 6 Meeting, Kimberley, October 25, 1980
CIM BULL. 75, No. 840, pp. 99-113
CIM EMGJ Vol.1, No.1, pp. 1-20, 1992
EMPR OF 2000-22

DATE CODED: 1990/01/19
DATE REVISED: 1992/04/13

CODED BY: SBB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 022**

MINFILE NUMBER: **094F 023**

NATIONAL MINERAL INVENTORY: 094F7 Pb3

NAME(S): **PIE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F07W 094F06E
BC MAP:

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 26 59 N
LONGITUDE: 124 58 06 W
ELEVATION: 1100 Metres

NORTHING: 6369159
EASTING: 381884

LOCATION ACCURACY: Within 500M

COMMENTS: Located southeast of the Cirque deposit (094F 008), 30 kilometres east of Fort Ware. Elevation ranges from 1100 to 2300 metres. See also Akie (094F 031).

COMMODITIES: Barite Lead Zinc Copper

MINERALS

SIGNIFICANT: Barite Galena Sphalerite Chalcopyrite Pyrite
MINERALIZATION AGE: Devonian

DEPOSIT

CHARACTER: Stratiform Podiform Breccia Vein
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Devonian	Earn	Gunsteel	
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Shale
Brecciated Limestone

HOSTROCK COMMENTS: The Earn Group range in age from Devonian to Mississippian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

CAPSULE GEOLOGY

The Pie area is underlain by a platformal sequence of grey limestone and carbonate debris-flow breccia of the Middle Devonian Dunedin Formation overlain by basinal black graphitic shales of the Upper Devonian Gunsteel Formation (Earn Group).

The Gunsteel shales contain beds of nodular barite and minor amounts of associated galena and sphalerite. The matrix of the underlying debris flow limestone breccias is host to minor amounts of chalcopyrite and pyrite.

BIBLIOGRAPHY

EMPR ASS RPT 7373, 7506, *8647, *10744, 21676
EMPR BULL 103
EMPR EXPL 1979-267,328; 1980-37
EMPR PF 094F023 (MacIntyre, D.G. (1979): Northeast British Columbia, the Geology of the Southwest Corner of the Kwadacha Wilderness Park and Mt. Alcock Ba-Pb-Zn-Ag showing).
CIM EMG Vol. 1, No. 1, pp. 1-20, 1992
MacIntyre, D.G. (1980): Geologic Setting of Recently Discovered Shale-Hosted Barite-Lead-Zinc Occurrences Northeast British Columbia, Paper presented at CIM District 6 Meeting, Kimberley, October 25, 1980
Columbia, Paper presented at the 48th Annual Meeting PAPD Convention, March 12, 1980
EMPR OF 2000-22

DATE CODED: 1990/01/19
DATE REVISED: 1992/04/12

CODED BY: SBB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 024**

NATIONAL MINERAL INVENTORY: 094F13 Zn2

NAME(S): **BEAR**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F13W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 57 42 N
LONGITUDE: 125 47 14 W
ELEVATION: 1650 Metres

NORTHING: 6427843
EASTING: 335102

LOCATION ACCURACY: Within 500M

COMMENTS: Drill holes 1 and 2 (Assessment Report 8626, Map 2).

COMMODITIES: Barite Lead Zinc Silver

MINERALS

SIGNIFICANT: Barite Pyrite Galena Sphalerite

ASSOCIATED: Pyrite

ALTERATION: Silica

COMMENTS: Silification of overlying argillite to chert from exhalative silica.

ALTERATION TYPE: Silicific'n

MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Stratiform Massive Concordant
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.

TYPE: E14 Sedimentary exhalative Zn-Pb-Ag

SHAPE: Tabular

MODIFIER: Folded Faulted

DIMENSION: 1500 x 200 x 60 Metres

STRIKE/DIP: 155/80W

TREND/PLUNGE:

COMMENTS: The attitude is that of the upper sulphide zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Earn Gunsteel

LITHOLOGY: Siliceous Shale
Carbonaceous Shale
Chert

HOSTROCK COMMENTS: The Earn Group ranges from Devonian to Mississippian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1980

SAMPLE TYPE: Drill Core

COMMODITY

GRADE

Silver

34.3000

Grams per tonne

Lead

0.5600

Per cent

Zinc

2.4500

Per cent

COMMENTS: Assays are from 6.9 metres true thickness, diamond drill hole 80B-1.

REFERENCE: Assessment Report 8626.

CAPSULE GEOLOGY

The Bear showing is underlain by calcareous black shale, dolomite and ankeritic siltstone of the Ordovician to Devonian Road River Group, chert-pebble conglomerate of Lower Devonian age and siliceous and carbonaceous black shale of the Upper Devonian Gunsteel Formation (Earn Group).

The mineralization, traced for 1.5 kilometres along strike and intersected over 200 metres below the surface, is hosted within siliceous shales of the Gunsteel Formation. The mineralization is conformable with the bedding, which strikes 155 degrees and dips 80 degrees west. Diamond drilling has defined an upper and lower zone of massive mineralization, separated by two to eight metres of barren shale. The upper zone, 60 to 25 metres in width, is comprised of finely crystalline, bedded barite with interstitial galena and sphalerite, overlying non-baritic, finely laminated, massive pyrite

CAPSULE GEOLOGY

with interstitial and bedded galena and sphalerite. Grades of 34.3 grams per tonne silver, 2.45 per cent zinc and 0.56 per cent lead, over 6.9 metres (true thickness), were obtained from the massive sulphide mineralization (Assessment report 8626, Drill log 80B-1). To the southeast, this body grades into a mega-breccia, slump body, with deformed bedded barite and pyrite clasts in a very fine grained barite, pyrite, and chert matrix.

In the hanging wall of the upper zone, mineralization occurs as sporadic 1 to 2-centimetre interbeds and veins of galena, barite and sphalerite hosted within black carbonaceous chert. A 17.1-metre drill intersection (11.1 metres true thickness) of this mineralization graded 1.91 per cent combined lead-zinc and 15.7 grams per tonne silver (Assessment Report 8626, Drill log 80b-4).

The lower zone, comprised of non-baritic, massive pyrite with galena and sphalerite, graded 1.35 per cent combined lead-zinc and 7.7 grams per tonne silver (Assessment Report 8626).

BIBLIOGRAPHY

EMPR ASS RPT 8537, *8626, *9918, *10976
EMPR EXPL 1980-444
GSC P 91-1A, pp. 27-31
Chevron File
EMPR OF 2000-22

DATE CODED: 1990/01/04
DATE REVISED: 1992/04/12

CODED BY: SBB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **PESIKA**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F01W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 11 36 N
LONGITUDE: 124 27 04 W
ELEVATION: 2050 Metres

NORTHING: 6339841
EASTING: 412310

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of massive barite horizon (Assessment Report 9268, Plate 2).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite Pyrite
MINERALIZATION AGE: Ordovician-Silurian

DEPOSIT

CHARACTER: Stratiform	Massive	Stratabound	
CLASSIFICATION: Sedimentary	Exhalative	Syngenetic	Industrial Min.
SHAPE: Tabular			

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Paleozoic

GROUP

Road River

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Graphitic Pyritic Mudstone
Mafic Volcanic
Siliceous Mudstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Pesika area is underlain by a northwest trending belt of Paleozoic clastics. Ordovician to Devonian Road River Group black siliceous mudstone horizons, interbedded with black, graphitic and pyritic mudstones, locally contain barite laminations and bedded barite up to 1 metre thick.

Stratigraphically below this unit is a discontinuous horizon of Ordovician Ospika Formation mafic volcanics.

BIBLIOGRAPHY

EMPR ASS RPT 8329, *9268
EMPR BULL 103
EMPR EXPL 1980-437
EMPR OF 2000-22

DATE CODED: 1992/03/03
DATE REVISED: 1992/04/14

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 026**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEL EAST**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F07W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 20 33 N
LONGITUDE: 124 59 44 W
ELEVATION: 1740 Metres

NORTHING: 6357274
EASTING: 379900

LOCATION ACCURACY: Within 500M

COMMENTS: Top of "Main" barite kill-zone (Assessment Report 14177, Plate 2).

COMMODITIES: Barite Lead

MINERALS

SIGNIFICANT: Barite Galena
MINERALIZATION AGE: Silurian
ISOTOPIC AGE:

DATING METHOD: Fossil MATERIAL DATED: Fossil

DEPOSIT

CHARACTER: Stratiform Massive Stratabound
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Paleozoic Road River Unnamed/Unknown Formation

LITHOLOGY: Shale
Siltstone

HOSTROCK COMMENTS: The siltstone and shale hosts are Silurian in age.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: MAIN

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Chip
COMMODITY GRADE
Lead 6.6000 Per cent

COMMENTS: A 0.35-metre chip sample.
REFERENCE: Assessment report 14177.

CAPSULE GEOLOGY

The Del East property is underlain by a northwest trending thrust panel of Cambrian to Devonian stratigraphy. Oldest to youngest, the rocks are limestone and phyllites of the Cambrian to Ordovician Kechika Group, overlain by shales, silty limestones, siltstones and dolomites of the Ordovician to Devonian Road River Group. These are overlain by siliceous shale and mudstone of the Devonian to Mississippian Earn Group.

Bedded barite and galena (the "Main Zone") is hosted in a horizon of shales within the Silurian siltstone unit of the Road River Group. The mineralization, 25 metres in width, contains a 0.35 metre section that grades 6.6 per cent lead (Assessment Report 14177).

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EMPR ASS RPT 9672, 11557, *14177
EMPR BULL 103
EMPR EXPL 1983-489
EMPR OF 2000-22

DATE CODED: 1992/03/04
DATE REVISED: 1992/04/12

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 027**

NATIONAL MINERAL INVENTORY:

NAME(S): **AKI, AKIE**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F01W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 11 53 N
LONGITUDE: 124 29 43 W
ELEVATION: 1920 Metres

NORTHING: 6340424
EASTING: 409652

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of main gossan (Assessment Report 8478, Map 3).

COMMODITIES: Zinc Silver

MINERALS

SIGNIFICANT: Pyrite Limonite
COMMENTS: Zinc and silver minerals unknown. The gossans are most likely derived from ground water percolating through the pyritic Gunsteel shales.

ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Stratiform
CLASSIFICATION: Residual Sedimentary Exhalative Syngenetic
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
DIMENSION: 300 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions given are for the largest gossan body.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Earn Gunsteel

LITHOLOGY: Carbonaceous Pyritic Shale

HOSTROCK COMMENTS: Gossans are associated with exposures of Gunsteel shales.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 2.0800 Grams per tonne
Zinc 0.9800 Per cent

COMMENTS: Values are from an composite of 13 samples taken from a number of the gossans.

REFERENCE: Assessment Report 10002.

CAPSULE GEOLOGY

The Aki showing is located immediately north of the Gin showing (094F 017). The area is underlain by Cambrian to Ordovician Kechika Group talcose phyllites and calcareous mudstones, unconformably overlain by a succession of Ordovician to Devonian Road River Group siltstones, shales, limestone, and dolomites, and Ordovician Ospika Formation volcanics. This succession is overlain by Lower Devonian to Mississippian Earn Group sediments, the most voluminous being the Lower Devonian Gunsteel Formation grey-black pyritic shales.

Several limonite gossans, associated with Gunsteel Formation shales, occur in the area. The largest exposed gossan is 300 metres long and 50 metres wide, the depth is unknown. A composite of 13 samples of limonite from the gossans assayed 0.98 per cent zinc and 2.08 grams per tonne silver (Assessment Report 10002).

BIBLIOGRAPHY

EMPR ASS RPT *8478, *10002
EMPR BULL 103
GSC OF 606

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1250
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR OF 2000-22

DATE CODED: 1992/03/06
DATE REVISED: 1992/04/12

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **ATAN COPPER**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F16E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 56 57 N
LONGITUDE: 124 05 14 W
ELEVATION: 1600 Metres

NORTHING: 6423568
EASTING: 435646

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Assessment Report 19124, Drawing 4).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Malachite Azurite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cambrian	Atan	Unnamed/Unknown Formation	

LITHOLOGY: Dolomite
Quartzite
Siltstone

HOSTROCK COMMENTS: Within the Atan Group, the dolomite sits stratigraphically below the quartzite unit.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1989
SAMPLE TYPE: Grab	
COMMODITY	GRADE
Silver	27.8000 Grams per tonne
Copper	11.5200 Per cent
REFERENCE: Assessment Report 21437.	

CAPSULE GEOLOGY

The Atan Copper showing is exposed in a tributary valley on the east side of Grayling Creek. The valley is underlain by Cambrian to Silurian platformal sequence of carbonates, quartzites and siltstones.

Lower Cambrian Atan Group dolomites and quartzites, intruded by mafic dykes, are conformably overlain by Cambrian to Ordovician Kechika Group arenaceous dolomites and limestones and Silurian Nonda Formation siltstones.

A coarse crystalline chalcopyrite, malachite, and azurite vein is hosted within a dolomite, believed to belong to the lower Atan Group. A grab sample of this material graded 11.52 per cent copper and 27.8 grams per tonne silver (Assessment Report 21437).

BIBLIOGRAPHY

EMPR GEM 1970-62; 1971-72,75
EMPR ASS RPT *12594, *19124, *21437
GSC OF 606
GSC P 79-1A, p. 228

DATE CODED: 1992/03/09
DATE REVISED: 1992/04/12

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 029**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRAYLING CREEK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F16E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 57 50 N
LONGITUDE: 124 05 23 W
ELEVATION: 1410 Metres

NORTHING: 6425210
EASTING: 435524

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing by Grayling Creek (Assessment Report 19124, Drawing 4).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Pyrite Bornite Chalcopyrite Tetrahedrite
ALTERATION: Quartz Calcite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Vein
CLASSIFICATION: Replacement Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE: Lower Cambrian GROUP: Atan FORMATION: Unnamed/Unknown Formation IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Siliceous Fractured Dolomite
Quartzite
Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Chip
COMMODITY: Silver GRADE: 10.2000 Grams per tonne
Copper 1.4000 Per cent

COMMENTS: Assay was derived from a composite chip sample.
REFERENCE: Assessment Report 21437.

CAPSULE GEOLOGY

The Grayling Creek showing occurs at two locations in Grayling Creek valley, at an elevation of 1410 metres on the west side and 1675 metres on the east side of the valley. The valley and surrounding slopes are underlain by Cambrian to Silurian platformal sequence of carbonates, quartzites and siltstones.

Lower Cambrian Atan Group dolomites and quartzites, intruded by mafic dykes, are conformably overlain by a sequence of Cambrian to Ordovician Kechika Group arenaceous dolomites and limestones and Silurian Nonda Formation siltstones.

Mineralization occurs at the same stratigraphic level on both sides of the valley, at the top of the Atan Group immediately below the Kechika Group. The showings consist of irregular pods, open space-fillings, and veins of massive pyrite, bornite, chalcopyrite and tetrahedrite in silicified fractured dolomite. Fractures are completely healed by crystalline calcite. A composite chip sample of massive sulphide mineralization graded 1.4 per cent copper and 10.2 grams per tonne silver (Assessment Report 21437).

BIBLIOGRAPHY

EMPR GEM 1970-62; 1971-72,75
EMPR ASS RPT *12594, *19124, *21437
GSC OF 606

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1253
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 79-1A, p. 228

DATE CODED: 1992/03/09
DATE REVISED: 1992/04/12

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **FAMILY**

MINING DIVISION: Omineca

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094F01W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 08 50 N
LONGITUDE: 124 23 18 W
ELEVATION: 1800 Metres

NORTHING: 6334629
EASTING: 415998

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of copper mineralized outcrop (Assessment Report 5861, Map 1).

COMMODITIES: Copper Zinc

MINERALS

SIGNIFICANT: Chalcocite Sphalerite Pyrite

ASSOCIATED: Quartz Calcite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Paleozoic	Road River	Unnamed/Unknown Formation	

LITHOLOGY: Calcareous Silty Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Family showing is located in the Ospika River Valley. An area underlain by thin imbricate thrust sheets of basinal sequence Ordovician to Devonian Road River Group sediments and carbonates, and Ordovician Ospika Formation mafic volcanics. The showing, hosted in Road River Group calcareous silty-shale, consists of a number of quartz-calcite veins mineralized with minor amounts of chalcocite, sphalerite and pyrite.

BIBLIOGRAPHY

EMPR ASS RPT *5861
EMPR BULL 103
GSC OF 606
GSC P 79-1A, pp. 227-231

DATE CODED: 1992/03/10
DATE REVISED: 1992/04/12

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094F 031**

NATIONAL MINERAL INVENTORY:

NAME(S): **AKIE**, CARDIAC CREEK, GATAGA,
 SOUTH GATAGA

STATUS: Developed Prospect
 REGIONS: British Columbia
 NTS MAP: 094F07W
 BC MAP:

MINING DIVISION: Omineca
 UTM ZONE: 10 (NAD 83)

LATITUDE: 57 22 37 N
 LONGITUDE: 124 51 31 W
 ELEVATION: 1660 Metres

NORTHING: 6360874
 EASTING: 388246

LOCATION ACCURACY: Within 500M

COMMENTS: Showing located north of the Akie River about 49 kilometres east of the community of Ware and 25 kilometres south-southeast of the Cirque deposit (094F 008), in north-central British Columbia (Property File - Description, Ecstall Mining Corporation). See also Pie (094F 023).

COMMODITIES: Zinc Lead Silver

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena
 ASSOCIATED: Barite Carbonate
 MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Massive Stratabound
 CLASSIFICATION: Sedimentary Exhalative Syngenetic
 TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
 DIMENSION: 1400 x 800 x 20 Metres

STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Devonian	Earn	Gunsteel	
Silurian	Road River	Unnamed/Unknown Formation	

LITHOLOGY: Graphitic Shale
 Calcareous Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
 TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1994
 SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	9.7000	Grams per tonne
Lead	0.9000	Per cent
Zinc	4.2000	Per cent

COMMENTS: Over 30.5 metres true thickness. Included in this intersection are 7 metres grading 8.4 per cent zinc, 1.6 per cent lead and 14.3 grams per tonne silver.

REFERENCE: Property File - Property description, Ecstall Mining Corporation.

ORE ZONE: TOTAL REPORT ON: Y
 CATEGORY: Inferred YEAR: 1996
 QUANTITY: 12000000 Tonnes

COMMODITY	GRADE	
Silver	17.1000	Grams per tonne
Lead	1.5000	Per cent
Zinc	8.6000	Per cent

COMMENTS: Estimated geological resource.
 REFERENCE: Information Circular 1997-1, page 20.

CAPSULE GEOLOGY

The Gataga property is located in the north-central part of the province about 25 kilometres south-southeast of the Cirque deposit (094F 008). The property consists of the Pie (north) (094F 023) and Akie (south) claim groups which are situated over a portion of the Kechika Trough, the southern extent of the Selwyn Basin.

CAPSULE GEOLOGY

Within the Gataga area, sulphide mineralization is developed within the Gunsteel Formation, an Upper Devonian sequence of graphitic shales overlying Silurian calcareous siltstones of the Road River Group. The Gunsteel is part of the Upper Devonian-Mississippian Earn Group. Mineralization is typically intercalated within the graphitic shales as fine grained, massive to well bedded pyrite, sphalerite and galena with appreciable barite and carbonate. Remobilized sulphide mineralization occurs as veinlets in the surrounding lithologies.

The property area was explored in the early 1980s by Rio Canex who identified areas of anomalous base and precious metals in soils coincident with the Gunsteel Formation on what is now the Akie property. Sulphide occurrences were documented as well as extensive barite horizons; no drilling was done. Metall Mining Corporation optioned the Gataga property in 1992 and carried out exploration work designed to confirm and redefine Rio Canex's geochemical anomalies through resampling. The 1993 program consisted of preliminary soil geochemistry on the Pie and Akie claims. In 1994, Metall continued geochemical coverage of the Pie and Akie claims along with diamond drilling of the anomalies. Prospecting/mapping within the anomalous trend led to the discovery of massive sulphides and barite in outcrop (Cardiac Creek showing: 16 per cent zinc, 2.8 per cent lead over 40 centimetres) dipping 075 degrees to the southwest near the Devonian shale/Silurian siltstone contact (the "Cardiac horizon"). The drill program was extended in 1994 to further evaluate this horizon with a total of 4273 metres drilled. Results were highly encouraging: Sedex-type base metal mineralization was intersected in 8 out of 12 holes on the Cardiac horizon which defined a zone with a strike length of 1400 metres to a depth of 300 metres. Average thickness is 10 metres. The drillhole spacing was very wide, over 400 metres on strike and 100-200 metres downdip.

Drillhole A-94-12 intersected 30.5 metres (true thickness) grading 4.2 per cent zinc, 0.9 per cent lead and 9.7 grams per tonne silver. Included in this intersection are 7 metres grading 8.4 per cent zinc, 1.6 per cent lead and 14.3 grams per tonne silver (Property description, 1995).

Inmet Mining Corporation (formerly Metall Mining) continued to explore the depth potential of the Akie deposit it holds under an option agreement with Ecstall Mining Corporation. In 1995, Inmet Mining Corporation drilled seven holes totalling approximately 4900 metres to depths in excess of 1000 metres, testing the downdip extent of the deposit. Within the massive sulphide horizon, a Lower to Middle Famennian ammonite (Alpinites cf. kayseri) was identified. Ecstall currently estimates the dimensions of the deposit to be 1400 metres long by 800 metres deep by 20 metres thick (Information Circular 1996-1, page 16).

Based on results from four holes within a 600 by 1000 metre longitudinal area, Ecstall estimates the Akie resource to be 12-15 million tonnes grading more than 10 per cent combined zinc-lead over a width of 6-10 metres (Northern Miner - June 3, 1996).

In 1996, Inmet continued deep drilling along the Cardiac horizon, as well as "reconnaissance" drilling of anomalies along strike of known mineralization. The Cardiac Creek zone has been traced by drilling along a strike length of 1400 metres, a thickness ranging from 10 to 30 metres, and to depths of 600 metres. Inmet has estimated a geological resource of 12 million tonnes grading 8.6 per cent zinc, 1.5 per cent lead and 17.1 grams per tonne silver (Information Circular 1997-1, page 20). Surface drilling also tested the strike projection to the north and south of the Cardiac zone at 1 kilometre intervals over a distance of approximately 7 kilometres. Encouraging results were reported, particularly from the northern end of the property.

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- EMPR ASS RPT 22822, 24323
- EMPR BULL 103
- EMPR INF CIRC 1994-19, p. 22; 1995-1, p. 21; 1995-9, p. 16; 1996-1, p. 16; 1997-1, p. 20
- EMPR MAP 38
- EMPR PF (*Ecstall Mining Corporation (1995): Property description; Ecstall Mining Corporation Website (Nov.1999): Akie Deposit, 8 p.)
- GSC OF 483; 606
- MIN REV Winter 1996/97, p. 27,29,30,32
- N MINER June 19, June 26, Dec.4, 1995; June 3, 1996
- WWW <http://www.ecstall.com>; <http://www.infomine.com/>
- MacIntyre, D.G. (1980): Geologic Setting of Recently Discovered Shale-Hosted Barite-Lead-Zinc Occurrences Northeast British Columbia, Paper presented at the 48th Annual Meeting PAPD

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1257
REPORT: RGEN0100

BIBLIOGRAPHY

Convention, March 12, 1980
Columbia, Paper presented at CIM District 6 Meeting, Kimberley,
October 25, 1980
EMPR OF 1998-10
EMPR OF 2000-22

DATE CODED: 1995/03/27
DATE REVISED: 1997/04/30

CODED BY: GSB
REVISED BY: TGS

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094G 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEATTON RIVER**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 04 40 N
LONGITUDE: 122 37 29 W
ELEVATION: 1000 Metres

NORTHING: 6326106
EASTING: 522750

LOCATION ACCURACY: Within 500M

COMMENTS: Location of one deposit, 3.2 kilometres upstream of the Beatton River bridge, 0.40 kilometres south of the river (Geological Survey of Canada Memoir 259, page 146).

COMMODITIES: Iron

MINERALS

SIGNIFICANT: Limonite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform
CLASSIFICATION: Residual
TYPE: B07 Bog Fe, Mn, U, Cu, Au
SHAPE: Tabular
DIMENSION: 30 x 20 Metres

STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Lower Cretaceous

GROUP

Fort St. John

FORMATION

Sully

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Siderite Shale
Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1940

SAMPLE TYPE: Grab

COMMODITY

GRADE

Iron

31.1111 Per cent

COMMENTS: Assay results were for iron oxide (79.1 per cent), the iron value given above assumes Fe₂O₃ formula.

REFERENCE: Geological Survey Memoir 259.

CAPSULE GEOLOGY

The Beatton River area, underlain by Lower Cretaceous Sully Formation sideritic shales and siltstones (Fort St. John Group), hosts two bog iron deposits. One is located 3.2 kilometres, and the second 8 kilometres, upstream from the Beatton River bridge (Alaska Highway). Both deposits are in excess of 600 square metres in area; the depth is unknown, but is at least 25 centimetres. Samples from the two areas graded 79.70 and 78.10 per cent iron oxide, respectively.

BIBLIOGRAPHY

GSC MEM *259, p. 146

GSC OF 606

GSC P 63-10

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/24

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 002**

NATIONAL MINERAL INVENTORY: 094G5 Zn1

NAME(S): **EGG**, FOO, BE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 21 56 N
LONGITUDE: 123 49 33 W
ELEVATION: 1875 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6358381
EASTING: 450326

LOCATION ACCURACY: Within 500M

COMMENTS: Central to the area of the drill hole locations (Assessment Report 5179, Map 3).

COMMODITIES: Zinc Lead Barite Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Barite Chalcopyrite
ASSOCIATED: Calcite Barite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive Breccia Podiform
CLASSIFICATION: Replacement Epigenetic Hydrothermal Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Regular
DIMENSION: 300 x 60 x 60 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions are for the largest exposed calcite body.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Undefined Group Dunedin

LITHOLOGY: Brecciated Siliceous Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The central portion of the Redfern Lake area is underlain by Middle Devonian Dunedin Formation carbonates which conformably overlie Middle to Lower Devonian Stone Formation dolomites. To the east, this package is thrust over Devonian and Carboniferous Besa River Formation shales. To the west, a package of Cambrian to Ordovician Kechika Group and Ordovician Skoki Formation strata are thrust over the Dunedin and Stone formations. Between these two thrust faults, flat-lying Dunedin Formation limestone forms a plateau of over 14 square kilometres.

Massive barite, barite-calcite and calcite zones, hosted within the Dunedin Formation limestone, occur over the whole expanse of the plateau. The massive barite and calcite zones commonly grade outwards to brecciated and silicified limestone. Disseminated sphalerite, galena, and minor chalcopyrite are found in the silicified haloes of some of these zones. Sulphide mineralization is also found within calcite and/or barite veins, with up to 15 centimetres of massive brick red sphalerite, coarse galena and minor chalcopyrite (Assessment Report 5179). The largest exposed massive calcite body has a dimension of 300 metres by 60 metres by 60 metres.

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EMPR ASS RPT 4394, 4395, 4529, 4530, 4531, 4532, *5179, *5551, 7705
EMPR EXPL 1975-E169; 1979-269
EMPR *P 1991-4, pp. 71-88
EMPR PF *Noranda Report on the Diamond Drilling Program on the Be Group (094G General File).
GSC MEM 425
GSC BULL 186
GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/26

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 002**

MINFILE NUMBER: **094G 003**

NATIONAL MINERAL INVENTORY:

NAME(S): **MT. BOE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 34 04 N
LONGITUDE: 123 59 02 W
ELEVATION: 1524 Metres

NORTHING: 6381018
EASTING: 441145

LOCATION ACCURACY: Within 500M

COMMENTS: Central to the two showings (Geology, Exploration and Mining in British Columbia 1973, Figure 47).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Pyrite Marcasite Sphalerite Galena

ASSOCIATED: Quartz Calcite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Stratabound Vein

CLASSIFICATION: Replacement Epigenetic

TYPE: E12 Mississippi Valley-type Pb-Zn

SHAPE: Irregular

MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Devonian

GROUP

Undefined Group

FORMATION

Stone

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Fractured Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Mt. Boe showing is located directly north of Mt. Boe in Richard Creek valley. The valley exposes Middle to Lower Devonian Stone Formation dolomite, conformably overlain by Middle Devonian Dunedin Formation micritic limestone, which in turn is overlain by Devonian to Carboniferous Besa River Formation shale. This sequence is overthrust from the west by a panel of Stone Formation and Dunedin Formation strata, which in turn is overthrust by a package of Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation and Silurian Nonda Formation rock.

The showing, consisting of two fractured controlled, irregular shaped, massive pods of pyrite, marcasite, sphalerite and galena, is hosted within in the thrust-panel of the Stone Formation near the stratigraphic contact with overlying Dunedin Formation. White, sparry calcite and quartz-filled cavities are associated with the mineralization. The fracture-fillings may coalesce into irregular networks of veins.

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EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73;
Cominco Ltd., Map of Geology Surface Plan, Mineral Showings
and Drill Hole Locations of the Ric Group, 1972-73)
EMPR P 1991-4, pp. 71-88
GSC MEM 373
GSC BULL No. 186, 1970
GSC OF 606

DATE CODED: 1992/03/16
DATE REVISED: 1992/04/16

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 004**

NATIONAL MINERAL INVENTORY:

NAME(S): **RB, DEV, JUNE,**
MOUNT BERTHA, MT. BERTHA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G04E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 12 51 N
LONGITUDE: 123 44 13 W
ELEVATION: 1900 Metres

UTM ZONE: 10 (NAD 83)
NORTHING: 6341467
EASTING: 455490

LOCATION ACCURACY: Within 500M
COMMENTS: Centre of lead and zinc mineralization (Assessment Report 4090,
Map 2).

COMMODITIES: Lead Zinc Barite

MINERALS

SIGNIFICANT: Barite Galena Sphalerite
ASSOCIATED: Calcite Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform Vein Pipe
CLASSIFICATION: Replacement Epigenetic Hydrothermal Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Irregular
DIMENSION: 75 x 30 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Maximum dimensions of calcite-barite pods.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Undefined Group Dunedin

LITHOLOGY: Brecciated Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The RB area is underlain by a conformable package of Silurian Nonda Formation dolomite and sandstone, Lower Devonian Muncho-McConnell Formation dolomite, Middle to Lower Devonian Stone Formation dolomite and Middle Devonian Dunedin Formation limestone. This package is overthrust to the east onto Devonian to Carboniferous Besa River Formation shale.

Calcite and calcite-barite mineralization, hosted within Dunedin limestone, occurs in various localities as pods up to 75 by 30 metres in size, sheet-like veins, and pipe-like masses with enclosed limestone blocks. Small galena showings, with trace sphalerite, are associated with the calcite/barite veins and pods. Composition of the pods and veins range from 100 per cent calcite to 50 per cent barite.

BIBLIOGRAPHY

EM FIELDWORK 1999, pp. 148-156
EMPR ASS RPT *4090
EMPR GEM 1972-487, 1973-464
EMPR OF 2000-9
EMPR P 1991-4 pp. 71-87
GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/25

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 005**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEIL, JR**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 05 45 N
LONGITUDE: 123 50 38 W
ELEVATION: 1830 Metres

NORTHING: 6328370
EASTING: 448868

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of sphalerite showing (Assessment Report 5350, Map 2).

COMMODITIES: Zinc Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Galena Bornite
COMMENTS: Bornite found only in dolomite talus.
ASSOCIATED: Dolomite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Disseminated Stratabound
CLASSIFICATION: Replacement Epigenetic Hydrothermal
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Silurian Undefined Group Nonda

LITHOLOGY: Brecciated Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: BRECCIA

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1974

COMMODITY	GRADE	
Lead	0.2200	Per cent
Zinc	1.7400	Per cent

REFERENCE: Assessment Report 5350.

CAPSULE GEOLOGY

The Neil area is underlain by a folded sequence of Silurian Nonda Formation dolostone, Lower Devonian Muncho-McConnell Formation dolostone, Middle to Lower Stone Formation dolostone, Middle Devonian Dunedin Formation limestone, and Devonian to Carboniferous Besa River Formation shale. This sequence is overthrust from the west by a panel of Nonda Formation dolostone.

The mineralization, occurring within the Nonda Formation thrust panel, is comprised of scattered aggregates of reddish brown sphalerite and minor galena, hosted within a 1-metre wide, sparry white dolomite healed, fault breccia. A grab sample of the mineralization graded 1.74 per cent zinc and 0.22 per cent lead (Assessment Report 5350). Bornite mineralized dolomite talus-blocks occur at the base of a ridge which is geochemically anomalous in copper.

BIBLIOGRAPHY

EMPR ASS RPT *4886, *5350
EMPR GEM 1973-465, 1975-E168
EMPR OF 2000-9
EMPR P 1991-4, pp. 71-87
GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/24

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 006**

NATIONAL MINERAL INVENTORY: 094G12 Pb1

NAME(S): **FAITH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 36 28 N
LONGITUDE: 123 57 57 W
ELEVATION: 1615 Metres

NORTHING: 6385455
EASTING: 442289

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of mineralized outcrop (Assessment Report 4299, Map 1).

COMMODITIES: Lead

MINERALS

SIGNIFICANT: Galena Barite
COMMENTS: Sphalerite, galena, barite and fluorite mineralization found in talus blocks.

ASSOCIATED: Fluorite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated

CLASSIFICATION: Replacement

SHAPE: Irregular

DIMENSION: 6 x 3 Metres

COMMENTS: Area of exposed mineralized outcrop.

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP
Devonian Undefined Group

FORMATION
Stone

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Sandy Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Faith showing occurs in the Muskwa Ranges just east of the Rocky Mountain Foothills. The area is underlain by Middle to Lower Devonian Stone Formation dolomites conformably overlain by Middle Devonian Dunedin Formation limestone. This package is unconformably overlain by a thrust sheet of Silurian Nonda Formation siliceous dolomite.

Minor disseminated coarse grained galena occurs in lower Stone Formation sandy dolomite. The mineralization is exposed in a 3 by 6-metre outcrop surrounded by a large talus slope containing numerous galena, sphalerite, barite and fluorite mineralized dolomite talus-blocks.

BIBLIOGRAPHY

EMPR GEM 1972-489
EMPR ASS RPT *4299
EMPR P 1991-4, pp. 71-88
GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/13

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 007**

NATIONAL MINERAL INVENTORY: 094G5 Pb2

NAME(S): **TRI**, COLLEDGE CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 15 26 N
LONGITUDE: 123 51 36 W
ELEVATION: 2025 Metres

NORTHING: 6346347
EASTING: 448119

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of main mineralized outcrop (Assessment Report 4692, Figure 2).

COMMODITIES: Lead Zinc Copper Barite

MINERALS

SIGNIFICANT:	Galena	Sphalerite	Chalcocite	Malachite	Barite
ASSOCIATED:	Barite	Calcite			
ALTERATION:	Silica				
ALTERATION TYPE:	Silicific'n				
MINERALIZATION AGE:	Unknown				

DEPOSIT

CHARACTER:	Breccia	Stratabound	Disseminated
CLASSIFICATION:	Replacement	Epigenetic	Industrial Min.
TYPE:	E12	Mississippi Valley-type Pb-Zn	
SHAPE:	Irregular		
MODIFIER:	Fractured		
DIMENSION:	9 x 2	Metres	STRIKE/DIP:
COMMENTS:	Area of mineralized outcrop.		TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Siliceous Brecciated Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1975
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Copper		0.7500	Per cent

COMMENTS: Assay is from highest copper value reported from the property.
REFERENCE: Assessment Report 5823.

CAPSULE GEOLOGY

The Tri area is underlain by a conformable package of Silurian Nonda Formation, Lower Devonian Muncho-McConnell Formation and Middle to Lower Devonian Stone Formation strata. To the east, this package is thrust over Middle Devonian Dunedin Formation carbonates and Stone Formation dolostone. These, in turn, are overthrust onto Devonian to Carboniferous Besa River shales.

The mineralization, hosted within Dunedin Formation limestone, consists of disseminated galena and sphalerite within a barite-calcite healed breccia. The zone, 2-metres in width, can be traced for 9-metres along strike. A trench, 150 metres to the east of this zone, uncovered 1-metre of disseminated chalcocite and malachite in highly silicified limestone. Assays of samples of this material graded 0.75 and 0.45 per cent copper (Assessment Report 5823).

BIBLIOGRAPHY

EMPR ASS RPT *4692, *5407, *5823
EMPR GEM 1973-467; 1974-316; 1975-E169
EMPR OF 2000-9

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RUN TIME: 11:51:27

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BIBLIOGRAPHY

GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/20

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 1266
REPORT: RGEN0100

MINFILE NUMBER: **094G 008**

NATIONAL MINERAL INVENTORY: 094G4,5 Pb1

NAME(S): **LYNDA**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 14 25 N
LONGITUDE: 123 44 07 W
ELEVATION: 1830 Metres

NORTHING: 6344373
EASTING: 455622

LOCATION ACCURACY: Within 500M

COMMENTS: From grid coordinates of mineralized zone (Assessment Report 4790, Map 4).

COMMODITIES: Lead Barite

MINERALS

SIGNIFICANT: Galena Barite
ASSOCIATED: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound Podiform
CLASSIFICATION: Replacement Epigenetic Hydrothermal Industrial Min.
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Brecciated Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Lynda area is underlain by Middle Devonian Dunedin Formation argillaceous-fossiliferous limestone conformably overlain to the west by, and in fault contact to the east with, Devonian to Carboniferous Besa River shales.

Minor disseminated galena was noted on the mountain top, southwest of Cranswick Lake, near solution-collapse features in Dunedin limestone. In addition, calcite and barite pods occur within the limestone on the west slope of Cranswick Lake valley.

BIBLIOGRAPHY

EMPR ASS RPT *4790
EMPR GEM 1973-464
EMPR OF 2000-9
EMMPR PF (Geology, Canadian Superior Explorations Ltd., Scale 1:10 000)
GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/21

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 008**

MINFILE NUMBER: **094G 009**

NATIONAL MINERAL INVENTORY:

NAME(S): **NORDLING CREEK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 16 33 N
LONGITUDE: 123 50 56 W
ELEVATION: 2060 Metres

NORTHING: 6348410
EASTING: 448815

LOCATION ACCURACY: Within 500M

COMMENTS: Mineralized outcrop location (Assessment Report 4692, Figure 2).

COMMODITIES: Copper Lead Zinc Barite

MINERALS

SIGNIFICANT: Chalcopyrite Galena Sphalerite Barite
ASSOCIATED: Calcite
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Stratabound Concordant Vein
CLASSIFICATION: Replacement Epigenetic Hydrothermal Industrial Min.
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Devonian

GROUP

Undefined Group

FORMATION

Dunedin

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Brecciated Limestone
Brecciated Siliceous Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Nordling Creek area is underlain by a conformable sequence of Silurian Nonda Formation, Lower Devonian Muncho-McConnell Formation, and Middle to Lower Devonian Stone Formation carbonates. To the east, this sequence is thrust over Middle Devonian Dunedin Formation carbonates and underlying Stone Formation strata. These are, in turn, overthrust onto Devonian to Carboniferous Besa River Formation shales.

Mineralization occurs at a number of locations within Dunedin Formation limestone. Barite-calcite healed limestone breccia, on the high ridge north of Nordling Creek, contains disseminated chalcopyrite and malachite. Next to it, a second barite breccia zone contains large blebs of galena and sphalerite. South of Nordling Creek a vein of massive barite in crystalline limestone, contains sphalerite and galena along the footwall.

BIBLIOGRAPHY

EMPR ASS RPT *4692, *5407, *5823
EMPR GEM 1973-467; 1974-316; 1975-E169
EMPR OF 2000-9
GSC OF 606

DATE CODED: 1992/03/20
DATE REVISED: 1992/04/18

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 010**

NATIONAL MINERAL INVENTORY: 094G12 Zn1

NAME(S): **RIC, UPPER CREEK**

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 34 08 N
LONGITUDE: 123 57 35 W
ELEVATION: 1490 Metres

NORTHING: 6381121
EASTING: 442593

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Geology, Exploration and Mining in British Columbia 1973, Figure 47).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Pyrite Marcasite Sphalerite Galena

ASSOCIATED: Dolomite Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Stratabound

CLASSIFICATION: Replacement Epigenetic

TYPE: E12 Mississippi Valley-type Pb-Zn

SHAPE: Irregular

MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Devonian

GROUP

Undefined Group

FORMATION

Stone

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Fractured Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1972

SAMPLE TYPE: Drill Core

COMMODITY

GRADE

Zinc

3.3000

Per cent

COMMENTS: Value for zinc is an estimate for a 12-metre intersection.

REFERENCE: Cominco Ltd. drill log of hole C-8.

CAPSULE GEOLOGY

The Ric (Upper Creek) showing is one of a number zinc-lead showings located in Richard Creek valley. The valley exposes a conformable sequence of Middle to Lower Devonian Stone Formation dolomite, Middle Devonian Dunedin Formation micritic limestone and Devonian to Carboniferous Besa River Formation shale. This sequence is overthrust, from the west, by a panel of Stone Formation, which is, in turn, overthrust by package of Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation and Silurian Nonda Formation strata.

The Mineralization, hosted within the thrust panel of the Stone Formation dolomite, consists of pyrite, marcasite, sphalerite and galena as irregular massive pods along fractures. A 12-metre drill intersection of massive iron sulphide mineralization was estimated to grade 3.3 per cent zinc and minor lead (Property Files, 094G 010, Drill Logs of the Ric Group). White sparry dolomite and quartz-filled cavities are associated with the mineralization.

BIBLIOGRAPHY

EMPR ASS RPT *4299

EMPR GEM 1972-489; *1973-471

EMPR OF 2000-9

EMPR P 1991-4, pp. 71-88

EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73; Cominco Ltd., Map of Geology Surface Plan, Mineral Showings and Drill Hole Locations of the Ric Group, 1972-73)

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BIBLIOGRAPHY

GSC BULL No. 186, 1970
GSC MEM 373
GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/16

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 011**

NATIONAL MINERAL INVENTORY: 094G12 Pb2

NAME(S): **RUST**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 32 25 N
LONGITUDE: 123 55 38 W
ELEVATION: 2100 Metres

NORTHING: 6377909
EASTING: 444493

LOCATION ACCURACY: Within 500M

COMMENTS: Centred on the mineralized, east trending ridge (Assessment Report 4484, Map 2).

COMMODITIES: Lead

MINERALS

SIGNIFICANT: Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Replacement Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Undefined Group	Stone	

LITHOLOGY: Vuggy Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

In the Rust area, Middle to Lower Devonian Stone Formation dolomites are thrust over Devonian to Carboniferous Besa River Formation shales to the northeast and Middle Devonian Dunedin Formation limestone to the southeast.
Disseminated galena occurs in vuggy grey dolomite of the Stone Formation. This resistant weathering dolomite forms a high, east trending ridge, just south of Richards Creek.

BIBLIOGRAPHY

EMPR GEM 1972-488; 1973-469; 1974-316
EMPR ASS RPT *4484
GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/26

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **NORTHFACE**, KEI

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 24 29 N
LONGITUDE: 123 49 44 W
ELEVATION: 1525 Metres

NORTHING: 6363114
EASTING: 450200

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of upper mineralized strata (Assessment Report 5551, Map 4).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Smithsonite Galena Pyrite
ASSOCIATED: Quartz Calcite Dolomite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound Breccia
CLASSIFICATION: Replacement Epigenetic Hydrothermal
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Tabular
DIMENSION: 200 x 6 Metres STRIKE/DIP:
COMMENTS: The above dimension is for the surface exposure of the upper zone.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Brecciated Argillaceous Dolomite
Brecciated Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1975
SAMPLE TYPE: Grab	
<u>COMMODITY</u>	<u>GRADE</u>
Lead	0.0900 Per cent
Zinc	5.0000 Per cent

REFERENCE: Assessment Report 5551.

CAPSULE GEOLOGY

The northern portion of the Redfern Lake area is underlain by a conformable package of Cambrian to Ordovician Kechika Group, Middle Ordovician Skoki Formation, an unnamed Upper Ordovician unit, Silurian Nonda Formation, Lower Devonian Muncho-McConnell Formation, Lower to Middle Devonian Stone Formation and Middle Devonian Dunedin Formation strata. To the east, this package is thrust over Dunedin and Stone Formations. These, in turn, are thrust over Devonian and Carboniferous Besa River Formation shale. The Dunedin Formation can be divided into a lower dolomite unit and an upper micritic limestone unit.

The Northface showing, exposed in a large cliff face, occurs at two stratigraphic levels within the Dunedin Formation carbonates. The lower zone occurs as fine disseminated sphalerite, smithsonite, and pyrite in brecciated argillaceous dolomite. The breccia is healed by coarse crystalline white dolomite and calcite. This zone can be traced for 60 metres and is 7 metres thick. Assays returned less than 2 per cent zinc (Assessment Report 5551).

The upper zone is hosted in clean, massive, shattered and brecciated limestone. The mineralization, traced for over 200 metres with a width of 6.4 metres, consists of disseminated pyrite, sphalerite and galena associated with calcite, dolomite, and quartz crystals. The best assay from this zone gave 5.0 per cent zinc and 0.09 per cent lead (Assessment Report 5551).

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BIBLIOGRAPHY

EMPR GEM 1973-468; 1974-315
EMPR ASS RPT 4529, 4530, 4531, 4532, 4722, *5179, 5316, 5317, *5551,
5740, *6208, 7705
EMPR EXPL 1975-E169; 1979-269
EMPR P 1991-4, pp. 71-88
GSC OF 606
GSC MEM 425
GSC BULL 186

DATE CODED: 1992/03/19
DATE REVISED: 1992/03/20

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 013**

NATIONAL MINERAL INVENTORY: 094G4,5 Pb2

NAME(S): **BOOT**, HEEL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G04W 094G05W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 14 59 N
LONGITUDE: 123 50 12 W
ELEVATION: 1615 Metres

NORTHING: 6345494
EASTING: 449516

LOCATION ACCURACY: Within 500M

COMMENTS: Grid location of sphalerite mineralization (Assessment Report 4847, Map 4).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratiform Stratabound Vein
CLASSIFICATION: Replacement Epigenetic
SHAPE: Tabular
MODIFIER: Folded

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Undefined Group	Stone	

LITHOLOGY: Argillaceous Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Boot area is underlain by Lower to Middle Devonian Stone Formation argillaceous limestones and dolomites. Mineralization occurs as minor disseminated sphalerite grains in a 6-centimetre wide stratiform and stratabound horizon in the limestone. Mineralization also occurs as rare galena crystals in druse quartz-filled vugs associated with quartz veins cutting the limestone.

BIBLIOGRAPHY

EMPR GEM 1973-466
EMPR ASS RPT *4847
GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/20

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 014**

NATIONAL MINERAL INVENTORY: 094G4 Zn2

NAME(S): **LAD**, LASS

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094G04W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 57 05 29 N
LONGITUDE: 123 55 00 W
ELEVATION: 1830 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6327932
EASTING: 444452

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of drill locations on the North zone (Assessment Report 5328, Map 3).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite

ASSOCIATED: Dolomite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Disseminated Stratabound Stratiform

CLASSIFICATION: Replacement Epigenetic Hydrothermal

TYPE: E12 Mississippi Valley-type Pb-Zn

SHAPE: Tabular

DIMENSION: 750 x 1 Metres STRIKE/DIP: 130/20W TREND/PLUNGE:

COMMENTS: Dimension is strike length and deposit thickness.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Silurian	Undefined Group	Nonda	

LITHOLOGY: Brecciated Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: NORTH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1974

SAMPLE TYPE: Drill Core

COMMODITY

GRADE

Zinc

3.5800

Per cent

COMMENTS: Assay is from a 1-metre intersection.

REFERENCE: Assessment Report 5328.

CAPSULE GEOLOGY

Mt. McCusker is underlain by three thrust sheets of Paleozoic sediments. The most western sheet is comprised of Cambrian to Ordovician Kechika Group limestone and argillaceous limestone. This is thrust over a narrow panel of Silurian Nonda Formation dolostone and sandstone and an unnamed Upper Ordovician sandstone, dolostone, and shale unit. This, in turn, is thrust over a conformable sequence of Silurian Nonda Formation dolostone and sandstone, Lower Devonian Muncho-McConnell Formation dolostone and Lower to Middle Devonian Stone Formation dolostone. This panel hosts the mineralization.

Mineralization, hosted within Nonda Formation dolomite breccia, consists of blebs, patches, discontinuous veinlets, and disseminations of sphalerite (with rare galena and pyrite) in sparry dolomite cement. Two areas of mineralization (the North and South zones), separated by 450 metres of talus, are believed to be continuous, giving a total strike length of 750 metres. The average grade from surface chip samples is 2 to 3 per cent combined zinc and lead (Assessment Report 4865). The best mineralized drill intersection, collared in the North zone, was 1-metre of 3.58 per cent zinc with minimal lead (Assessment Report 5328). Minor lead and zinc mineralized quartz veins are present up to 20 metres below the breccia unit.

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ENERGY AND MINERALS DIVISION

PAGE: 1275
REPORT: RGEN0100

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GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/24

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 015**

NATIONAL MINERAL INVENTORY: 094G4 Zn2

NAME(S): **TOLL, BERTHA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G04W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 07 39 N
LONGITUDE: 123 45 20 W
ELEVATION: 1690 Metres

NORTHING: 6331832
EASTING: 454259

LOCATION ACCURACY: Within 500M

COMMENTS: Location of Drill hole 74-8 (Assessment Report 6445, Map 1).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite

ASSOCIATED: Calcite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratiform Stratabound Vein
CLASSIFICATION: Replacement Epigenetic Hydrothermal

TYPE: E12 Mississippi Valley-type Pb-Zn

SHAPE: Tabular

MODIFIER: Folded

DIMENSION:

STRIKE/DIP: 130/25W TREND/PLUNGE:

COMMENTS: Strike and dip are approximate.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Dolomite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1974
SAMPLE TYPE: Drill Core	
<u>COMMODITY</u>	<u>GRADE</u>
Zinc	4.6000 Per cent

COMMENTS: Assay is from section of drill core that included a 6.5-centimetre centimetre section of "massive" sphalerite.

REFERENCE: Assessment Report 5469.

CAPSULE GEOLOGY

The Toll area is underlain by Middle Devonian Dunedin Formation limestone and dolomite, folded into a northwest trending broad anticline. Sphalerite occurs in dolomite as banded layers subparallel to bedding, fine disseminations and as discontinuous stringers and blebs, it is associated with minor galena, swarms of calcite and dolomite crystals and up to 5-centimetre wide massive pyrite bands. A 6.5-centimetre wide massive band of sphalerite intersected in drill hole 74-8 assayed 4.6 per cent zinc and was associated with a massive calcite zone (Assessment report 5469).

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GSC OF 606

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/24

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **VALLEY ZINC**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 34 18 N
LONGITUDE: 123 53 30 W
ELEVATION: 1310 Metres

NORTHING: 6381374
EASTING: 446667

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Geology, Exploration and Mining in British Columbia 1973, Figure 47).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Pyrite Sphalerite Galena
ASSOCIATED: Calcite Dolomite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Stratabound
CLASSIFICATION: Replacement Epigenetic Hydrothermal
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Undefined Group	Stone	

LITHOLOGY: Brecciated Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Valley Zinc showing is one of a number of carbonate hosted zinc-lead showings located in Richard Creek valley. The valley exposes Devonian Stone Formation dolomites conformably overlain by Middle Devonian Dunedin Formation micritic limestones. The Devonian to Carboniferous Besa River Formation shale overlies the Dunedin Formation. This sequence is overthrust from the west, by a panel of Stone Formation rock, which, in turn, is overthrust by Cambrian to Ordovician Kechika Group carbonates, Ordovician Skoki Formation dolomite and Silurian Nonda Formation dolomite and quartzite.

The mineralization occurs in a window of Stone Formation strata exposed in the Richard Creek valley floor, at about the same stratigraphic level as the Bunker Creek showing (094G 026), which is 30 metres below the Stone and Dunedin formations contact. Mineralization consists of sphalerite and minor galena in massive pods of coarse pyrite along fractures within brecciated dolomite. White sparry dolomite and quartz-filled cavities are associated with the mineralization.

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EMPR ASS RPT *4299
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EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73;
Cominco Ltd., Map of Geology Surface Plan, Mineral Showings
and Drill Hole Locations of the Ric Group, 1972-73)
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GSC OF 606

DATE CODED: 1992/03/17
DATE REVISED: 1992/04/22

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 017**

NATIONAL MINERAL INVENTORY: 094G4 Zn2

NAME(S): **CAY, WOLVERINE, ALPHA, NOSE, PROFIT, PRO**

MINING DIVISION: Liard

STATUS: Prospect
 REGIONS: British Columbia
 NTS MAP: 094G12W 094G13W
 BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 42 32 N
 LONGITUDE: 123 55 14 W
 ELEVATION: 1510 Metres

NORTHING: 6396673
 EASTING: 445147

LOCATION ACCURACY: Within 500M
 COMMENTS: Centre of Wolverine showing (Assessment Report 16722, Figure 4A).

COMMODITIES: Zinc Lead Germanium Gallium Barite

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Formanite Barite
 Pyrite Germanite
 ASSOCIATED: Quartz Malachite Azurite Anglesite Fluorite
 ALTERATION: Quartz
 ALTERATION TYPE: Silicific'n
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Podiform Stratabound Massive
 CLASSIFICATION: Replacement Epigenetic
 TYPE: E12 Mississippi Valley-type Pb-Zn
 SHAPE: Regular
 MODIFIER: Folded
 DIMENSION: 1500 x 10 Metres STRIKE/DIP: 170/63 TREND/PLUNGE: 170/8
 COMMENTS: Dimensions are that of the strike trace of Dunedin limestone. Strike and dip is for bedding near the Wolverine zone. Trend and Plunge are for the anticline on which the mineralization is exposed.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Lower Devonian	Undefined Group	Stone	

LITHOLOGY: Brecciated Siliceous Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
 TERRANE: Ancestral North America

INVENTORY

ORE ZONE: ALPHA REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1986
 SAMPLE TYPE: Bulk Sample
 COMMODITY GRADE
 Gallium 0.0030 Per cent
 Germanium 0.0080 Per cent
 Zinc 6.2600 Per cent
 COMMENTS: Gallium is 30 grams per tonne. The 500 kilogram bulk sample, collected over 2.5 metres, consisted of sphalerite in barite gangue.
 REFERENCE: Assessment Report 16722.

ORE ZONE: NOSE REPORT ON: N
 CATEGORY: Assay/analysis YEAR: 1986
 SAMPLE TYPE: Bulk Sample
 COMMODITY GRADE
 Gallium 0.0040 Per cent
 Germanium 0.1500 Per cent
 Lead 0.0100 Per cent
 Zinc 22.6900 Per cent
 COMMENTS: Sample interval was 1.3 metres, concentrating on sphalerite mineralization. Gallium is 40 grams per tonne.
 REFERENCE: Assessment Report 16722.

MINFILE NUMBER: **094G 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOUTHFACE** REDFERN

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 20 53 N
LONGITUDE: 123 48 19 W
ELEVATION: 1675 Metres

NORTHING: 6356418
EASTING: 451539

LOCATION ACCURACY: Within 500M

COMMENTS: Location of 7.8 per cent zinc assay sample (Assessment Report 5551, Map 4).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Smithsonite Pyrite
ASSOCIATED: Calcite Quartz
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Podiform Massive Stratiform
CLASSIFICATION: Replacement Epigenetic Hydrothermal
SHAPE: Tabular
DIMENSION: 2000 x 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions are the length and maximum width of each of the two parallel zones separated by 3 metres of barren strata.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Devonian

GROUP

Undefined Group

FORMATION

Dunedin

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Coarse Grained Dolomite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1975

COMMODITY

GRADE

Lead 0.1400 Per cent
Zinc 7.8000 Per cent

REFERENCE: Assessment Report 5551, part 1.

CAPSULE GEOLOGY

The Redfern Lake area is underlain by Middle Devonian Dunedin Formation carbonates conformably overlying Middle to Lower Devonian Stone Formation dolomites. To the east, this package is thrust over Devonian to Carboniferous Besa River Formation shales. To the west, a package of Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation, Silurian Nonda Formation, Lower Devonian Muncho-McConnell Formation, and Middle to Lower Devonian Stone Formation rocks are thrust over the Dunedin Formation. The Dunedin Formation can be divided into two units, a lower dolomite unit and an upper limestone unit.

The Southface showing is hosted within fossiliferous-granular dolomite of the lower Dunedin Formation near the contact with the upper limestone unit. Mineralization consists of two stratiform zones of disseminated sphalerite and galena with associated drusy quartz and calcite patches. The zones, separated by 3 metres of barren strata, vary from 0.5 to 2 metres in width and can be traced for 2000 metres. A grab sample from the southern end graded 7.8 per cent zinc and 0.14 per cent lead; 700 metres to the west a second sample returned 1.8 per cent zinc and 0.04 per cent lead (Assessment Report 5551). A 3 by 1-metre lens of massive limonite, sphalerite, smithsonite, galena and minor pyrite occurs within the upper zone; a

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CAPSULE GEOLOGY

grab sample graded 44.0 per cent zinc and 14.6 per cent lead
(Assessment Report 5551).

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GSC OF 606
GSC MEM 425
GSC BULL 186

DATE CODED: 1992/03/19
DATE REVISED: 1992/03/20

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **PETRIE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 23 08 N
LONGITUDE: 123 47 56 W
ELEVATION: 1615 Metres

NORTHING: 6360588
EASTING: 451973

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of mineralized outcrop (Assessment Report 5551, Map 4).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Massive Concordant
CLASSIFICATION: Sedimentary Exhalative Industrial Min.
TYPE: E17 Sediment-hosted barite
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Undefined Group	Besa River	

LITHOLOGY: Phyllitic Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Petrie area is underlain by Devonian and Carboniferous (Mississippian) Besa River Formation phyllitic shale, overthrust from the west, by Middle Devonian Dunedin Formation carbonates and Middle to Lower Devonian Stone Formation dolomites.

About 500 metres east of this thrust fault, a 5.5-metre band of massive barite is hosted within the Besa River Formation phyllitic shale. The barite is apparently concordant with the bedding and parallel to the fault.

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GSC OF *606
GSC MEM 425
GSC BULL 186
Chevron File
EMPR OF 2000-22

DATE CODED: 1992/03/19
DATE REVISED: 1992/03/26

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 020**

NATIONAL MINERAL INVENTORY:

NAME(S): **BUCKINGHORSE R**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G07W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 24 42 N
LONGITUDE: 122 52 29 W
ELEVATION: 1333 Metres

NORTHING: 6363219
EASTING: 507526

LOCATION ACCURACY: Within 1 KM

COMMENTS: Description of location in Geological Survey Memoir 259, page 84.

COMMODITIES: Bentonite

MINERALS

SIGNIFICANT: Bentonite

MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER:	Stratiform	Massive	Stratabound
CLASSIFICATION:	Sedimentary	Syngenetic	Industrial Min.
TYPE:	E06 Bentonite		
SHAPE:	Tabular		

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Fort St. John	Buckinghorse	

LITHOLOGY: Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

The Buckinghorse area is underlain by flat-lying Lower Cretaceous Fort St. John Group sediments conformably overlying Lower Cretaceous and Earlier Bullhead Group strata. The Fort St. John Group is comprised of 300 metres of Sikanni Formation marine sandstones and shales overlying 1100 metres of Buckinghorse Formation shales. Three bentonite beds, ranging from 2.5 to 15.25 centimetres in width, occur in the basal 150 metres of the Buckinghorse Formation.

BIBLIOGRAPHY

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GSC OF 606
GSC P 63-10

DATE CODED: 1985/07/24
DATE REVISED: 1992/03/24

CODED BY: GSB
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **PINK MOUNTAIN**

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094G02E 094B15E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 02 40 N
LONGITUDE: 122 50 50 W
ELEVATION: 1370 Metres

NORTHING: 6322344
EASTING: 509270

LOCATION ACCURACY: Within 500M

COMMENTS: Location of drill hole on P-1 seam (Coal Assessment Report 595, Figure 4).

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal

MINERALIZATION AGE: Lower Cretaceous

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel Syngenetic

TYPE: A04 Bituminous coal

SHAPE: Tabular

MODIFIER: Folded Faulted

DIMENSION: 122 x 3 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: The P-1 coal seam was traced through a series of trenches and road cuts for 122 metres along strike, average width was approximately 3 metres.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Lower Cretaceous

GROUP

Bullhead

FORMATION

Gething

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Siltstone
Mudstone
Sandstone
Coal

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

Pink Mountain is underlain by a sequence of deltaic sediments (predominantly sandstone and siltstone) belonging to the Lower Cretaceous Gething Formation (Bullhead Group). The Gething Formation, 311 metres thick, is disconformably underlain by Jurassic Fernie Formation strata and is overlain conformably by Lower Cretaceous Buckingham Formation shale.

Nineteen coal seams and numerous coaly horizons occur in the Upper, Main, and Lower coal units of the Gething Formation. The coal seams, up to 12.2 metres in width, form large lenses and in some instances cross cutting "dykes".

The Main coal zones, from bottom to top of the section are as follows: the Bottom seam, 3.7 metres of bright coal; the P-10 seam, four coal partings varying from 0.09 to 0.5 metre thick; the P-1 seam, 2.1 metres of coal and coaly mudstone; and the P-2 seam, 0.85 metre of vitrain with minor durain partings - shaley in the top 0.24 metre.

The P-1 seam, with an average width of 3 metres, was traced for 122 metres along strike. Analyses of nine air dried coal samples from surface exposures, are as follows: ash, from 3.56 to 11.01 per cent; volatile matter, from 27.83 to 35.43 per cent; fixed carbon, from 33.67 to 59.79 per cent; calorific value, 8300-12243 BTU per pound; and sulphur, from 5.22 to 7.17 per cent (Coal Assessment Report 595). Except for the high sulphur content, the coal is good coking coal quality.

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EMPR COAL ASS RPT *595

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BIBLIOGRAPHY

GSC MEM 259 pp. 188-189

DATE CODED: 1986/02/10
DATE REVISED: 1992/03/25

CODED BY: EVFK
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 022**

NATIONAL MINERAL INVENTORY:

NAME(S): **RICHARDS CREEK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 37 29 N
LONGITUDE: 123 40 05 W
ELEVATION: 1500 Metres

NORTHING: 6387127
EASTING: 460100

LOCATION ACCURACY: Within 500M

COMMENTS: Located 2 kilometres north of Richards Creek, approximately 22 kilometres west of the junction of Richards Creek and Prophet River (Energy, Mines, and Petroleum Resources Fieldwork 1987, pages 396 to 410).

COMMODITIES: Phosphate

MINERALS

SIGNIFICANT: Fluorapatite
ASSOCIATED: Quartz Calcite Clay
MINERALIZATION AGE: Triassic

DEPOSIT

CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Syngenetic Replacement Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Tabular
DIMENSION: STRIKE/DIP: 155/45S TREND/PLUNGE:
COMMENTS: Strikes 155 and dips 45 degrees southwest.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Undefined Group	Toad	

LITHOLOGY: Siltstone
Shale
Phosphatic Siltstone
Carbonaceous Siltstone
Calcareous Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

The area of the Richards Creek showing is underlain by Triassic Toad River Formation carbonaceous and calcareous siltstone and shales unconformably overlying Permian Fantasque Formation strata. A thick phosphatic interval is exposed along a south flowing tributary of Richards Creek within the middle strata of the Toad River Formation. Phosphate-bearing rocks occur over a 290 metre stratigraphic interval. Phosphate nodules occur in several beds over an interval of 220 metres. Nodular phosphate is the dominant form with nodules comprising 5 to 40 per cent in beds which they occur. These nodules are typically black, ovoid to spherical and vary in diameter from 1 to 3 centimetres. Thin beds of pelletal phosphate are also present in the middle portion of the phosphatic sequence. The pellets occur in a carbonate-rich matrix, with 10 to 20 per cent of the pellets containing either a quartz or carbonate core.

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Butrenchuk, S.B. (1988-1989): *Phosphates in British Columbia, EMPR Paper (in press).
GSC P 63-33
GSC OF 606

DATE CODED: 1988/02/10
DATE REVISED: 1992/03/25

CODED BY: SBB
REVISED BY: WHH

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094G 024**

NATIONAL MINERAL INVENTORY:

NAME(S): **C-97-D**, TRUTCH SULPHUR

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G15W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 49 52 N
LONGITUDE: 122 57 35 W
ELEVATION: 859 Metres

NORTHING: 6409908
EASTING: 502392

LOCATION ACCURACY: Within 500M

COMMENTS: Location centred on collar of well, 30 kilometres southwest of the community of Prophet River (Geological Fieldwork 1988, page 531).

COMMODITIES: Sulphur

MINERALS

SIGNIFICANT: Sulphur
ASSOCIATED: Dolomite Anhydrite
MINERALIZATION AGE: Middle Devonian

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: F03 Gypsum-hosted sulphur
DIMENSION: 27 Metres STRIKE/DIP:
COMMENTS: Dimension is the drill intersected thickness of native sulphur.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Elk Point	Unnamed/Unknown Formation	

LITHOLOGY: Evaporite
Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

Native sulphur was encountered in a petroleum exploration well (C-97-D) drilled 30 kilometres southwest of the community of Prophet River.

The well was drilled in a succession of evaporites, reefal carbonates and thin clastic beds of the Middle Devonian Elk Point Group. Significant sulphur was intersected in the Elk Point evaporites. A drillstem test at 3200 to 3262 metres depth recovered 9.1 metres of muddy sulphur and 27.4 metres of native sulphur. Drilling samples from 3234 metres to 3271 metres consisted of dolomite and minor anhydrite together with sulphur in quantities ranging from trace to substantial.

BIBLIOGRAPHY

EMPR FIELDWORK *1988, pp. 529-531
EMPR PF (Hora, Z.D. (1992): Frasch Sulphur Opportunities in British Columbia and Alberta, in supplement to Mining Engineering, 121st Annual Meeting & Exhibit, 1992 (draft version) - see file 094G 023)
GSC MAP 12-1963
GSC MEM 295
GSC OF 606
GSC P 63-10

DATE CODED: 1991/02/21
DATE REVISED: 1992/03/25

CODED BY: PSF
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **KEILY CREEK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 30 31 N
LONGITUDE: 123 52 54 W
ELEVATION: 2058 Metres

NORTHING: 6374347
EASTING: 447174

LOCATION ACCURACY: Within 500M

COMMENTS: Centred on the mineralized contact between Dunedin Formation and Besa River Formation strata (Assessment Report 4482, Map 2).

COMMODITIES: Lead Zinc

MINERALS

SIGNIFICANT: Galena Sphalerite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Unknown
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: 1600 Metres

STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	
Devonian-Mississipp.	Undefined Group	Besa River	

LITHOLOGY: Chert
Shale
Limestone

HOSTROCK COMMENTS: Mineralization hosted in cherty horizon at contact between Dunedin Formation limestone and Besa River Formation shale.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Keily creek area is underlain by Devonian Stone Formation dolomites thrust over Devonian and Carboniferous Besa River Formation shales to the east, and Middle Devonian Dunedin Formation limestone to the southeast. The Besa River Formation apparently conformably overlies the Dunedin Formation.

Disseminated galena and sphalerite occur in a cherty horizon at the contact between the Besa River Formation and the Dunedin Formation, which can be traced for 1600 metres along strike.

BIBLIOGRAPHY

EMPR ASS RPT *4482
EMPR P 1991-4, pp. 71-88
GSC OF 606

DATE CODED: 1992/03/13
DATE REVISED: 1992/04/23

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 026**

NATIONAL MINERAL INVENTORY:

NAME(S): **BUNKER CREEK, RIC**

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 34 11 N
LONGITUDE: 123 53 57 W

NORTHING: 6381164
EASTING: 446216

ELEVATION: 1370 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Geology, Exploration and Mining in British Columbia 1973, Figure 47).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Marcasite Sphalerite Galena

ASSOCIATED: Dolomite Quartz

COMMENTS: Cavity-filling spatially related to mineralization.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Stratabound Vein

CLASSIFICATION: Replacement Epigenetic

TYPE: E12 Mississippi Valley-type Pb-Zn

SHAPE: Irregular

MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Undefined Group	Stone	

LITHOLOGY: Fractured Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1972

SAMPLE TYPE: Drill Core

COMMODITY

GRADE

COMMODITY	GRADE
Lead	0.2000 Per cent
Zinc	3.5000 Per cent

COMMENTS: Values are estimates from a 1.5 metre interval of drill core. Total mineralized intersection was 3 metres of 6.5 to 3.5 per cent zinc.

REFERENCE: Cominco drill logs for the Ric Group (log C-1) - Property File.

CAPSULE GEOLOGY

The Bunker Creek prospect is one of a number zinc-lead showings located in Richards Creek valley. The valley exposes Devonian Stone Formation dolomites conformably overlain by Middle Devonian Dunedin Formation micritic limestones and Devonian to Carboniferous Besa River Formation shale. This sequence is overthrust, from the west, by a panel of Stone Formation, which in turn, is overthrust by Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation and Silurian Nonda Formation strata.

Mineralization, hosted within the underlying Stone Formation approximately 30 metres stratigraphically below the Stone-Dunedin formations contact, is comprised of fracture controlled irregular massive pods of marcasite, sphalerite and galena. White sparry dolomite and quartz-filled cavities are associated with the mineralization. The fracture-fillings may coalesce into irregular networks of veins. A 1.5-metre diamond drill intersection was estimated to grade 3.5 per cent zinc and 0.2 per cent lead (Cominco Limited drill log for hole C-1 - Property File).

BIBLIOGRAPHY

EMPR ASS RPT *4299

EMPR GEM 1972-489; *1973-471

EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73 (see Ric

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1291
REPORT: RGEN0100

BIBLIOGRAPHY

- 094G 010); Cominco Ltd., Map of Geology Surface Plan, Mineral Showings and Drill Hole Locations of the Ric Group, 1972-73)
EMPR P 1991-4, pp. 71-88
GSC MEM 373
GSC BULL No. 186, 1970
GSC OF 606

DATE CODED: 1992/03/16
DATE REVISED: 1992/03/17

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 027**

NATIONAL MINERAL INVENTORY:

NAME(S): **VISTA**, VISTA RIDGE

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 23 18 N
LONGITUDE: 123 51 50 W
ELEVATION: 2400 Metres

NORTHING: 6360945
EASTING: 448069

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of mineralized massive barite outcrop (Assessment Report 5551, Map 4).

COMMODITIES: Zinc Lead Barite

MINERALS

SIGNIFICANT: Barite Smithsonite Sphalerite Galena Pyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Stratabound
CLASSIFICATION: Replacement Hydrothermal Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 40 x 12 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimension of massive barite pod.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Siliceous Pyritic Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

CAPSULE GEOLOGY

The western portion of the Redfern Lake area is underlain by a conformable package of Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation, an unnamed Upper Ordovician sandstone unit, Silurian Nonda Formation, Lower Devonian Muncho-McConnell Formation, Middle to Lower Devonian Stone Formation and Middle Devonian Dunedin Formation. To the east, this package is thrust over Dunedin and Stone formation strata, which, in turn, are thrust over Devonian to Carboniferous Besa River Formation shale. The Dunedin Formation can be divided into a lower dolomite unit and an upper micritic limestone unit.

The Vista Ridge showing, hosted by highly silicified and pyritic lower Dunedin Formation dolomite, occurs within the western most thrust panel. The mineralization consists of a 40 by 12-metre massive barite body with disseminated smithsonite, sphalerite, very minor galena, and associated calcite veins.

BIBLIOGRAPHY

EMPR GEM *1973-468; 1974-315
EMPR ASS RPT 4529, 4530, 4531, 4532, *5179, *5551, 7705
EMPR EXPL 1975-E169; 1979-269
EMPR *P 1991-4, pp. 71-88
GSC OF 606
GSC MEM 425
GSC BULL 186

DATE CODED: 1992/03/19
DATE REVISED: 1992/03/20

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **HEWEY**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 34 22 N
LONGITUDE: 123 58 17 W
ELEVATION: 1630 Metres

NORTHING: 6381564
EASTING: 441901

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Geology, Exploration and Mining in British Columbia 1973, Figure 47).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Pyrite Marcasite Sphalerite Galena

ASSOCIATED: Calcite Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Stratabound

CLASSIFICATION: Replacement Epigenetic

TYPE: E12 Mississippi Valley-type Pb-Zn

SHAPE: Irregular

MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Devonian

GROUP

Undefined Group

FORMATION

Stone

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Fractured Dolomite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Hewey showing is one of a number of zinc-lead showings located in Richards Creek valley. The valley exposes a conformable sequence of Middle to Lower Devonian Stone Formation dolomites, Middle Devonian Dunedin Formation micritic limestones and Devonian to Carboniferous Besa River formation shale. This sequence is overthrust by a panel of Stone Formation and Dunedin Formation strata, which is, in turn, overthrust by a package of Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation and Silurian Nonda Formation rock.

The showing is exposed high on the south side of Richards Creek valley in a south flowing tributary stream. Fracture-controlled irregular pods of massive pyrite and marcasite with sphalerite-healed fractures and minor galena occur in the thrust panel of Stone Formation strata near the stratigraphic contact with overlying Dunedin Formation rock. White sparry calcite and quartz-filled cavities are associated with the mineralization.

BIBLIOGRAPHY

EMPR ASS RPT *4299
EMPR GEM 1972-489; *1973-471
EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73 (see Ric - 094G 010); Cominco Ltd., Map of Geology Surface Plan, Mineral Showings and Drill Hole Locations of the Ric Group, 1972-73 (see Ric - 094G 010)
EMPR P 1991-4, pp. 71-88
GSC MEM 373
GSC BULL No. 186, 1970
GSC OF 606

DATE CODED: 1992/03/17
DATE REVISED: 1992/04/23

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 031**

NATIONAL MINERAL INVENTORY:

NAME(S): **RIC-7**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 37 55 N
LONGITUDE: 123 54 28 W
ELEVATION: 1692 Metres

NORTHING: 6388097
EASTING: 445793

LOCATION ACCURACY: Within 500M

COMMENTS: Central to the showings (Property File - 094G 031, Geology Surface Plan, Drill Hole Locations, Mineral Showings Map, 1973).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Pyrite Marcasite Sphalerite Galena

ASSOCIATED: Calcite Quartz

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Stratabound Vein

CLASSIFICATION: Replacement Epigenetic

TYPE: E12 Mississippi Valley-type Pb-Zn

SHAPE: Irregular

DIMENSION: 70 x 35 Metres STRIKE/DIP: TREND/PLUNGE:

COMMENTS: Dimension is for the area in which the seven mineralized zones are exposed.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Devonian

Undefined Group

Stone

LITHOLOGY: Fractured Dolomite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Ric-7 showing is one of a number of zinc-lead showings located in Richards Creek valley. The valley is underlain by a conformable sequence of Middle to Lower Devonian Stone Formation dolomite, Middle Devonian Dunedin Formation micritic limestone and Devonian to Carboniferous Besa River Formation shale. This sequence is overthrust by a panel of Stone Formation and Dunedin Formation strata, which in turn is overthrust by a sequence of Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation and Silurian Nonda Formation rock.

The showing, exposed over a 70 by 35 metre area, occurs in the Stone Formation thrust panel near the stratigraphic contact with the overlying Dunedin Formation. Seven zones of pyrite, marcasite, sphalerite and galena occur as irregular massive pods and veinlets along fractures. The veinlets occasionally coalesce into an irregular networks of veins. White sparry calcite and quartz-filled cavities are associated with the mineralization.

BIBLIOGRAPHY

EMPR ASS RPT *4299
EMPR GEM 1972-489; *1973-471
EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73 (see Ric - 094G 010); Cominco Ltd., Map of Geology Surface Plan, Mineral Showings and Drill Hole Locations of the Ric Group, 1972-73 (see Ric - 094G 010))
EMPR P 1991-4, pp. 71-88
GSC MEM 373
GSC BULL No. 186, 1970
GSC OF 606

DATE CODED: 1992/03/17
DATE REVISED: 1992/04/17

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 031**

MINFILE NUMBER: **094G 032**

NATIONAL MINERAL INVENTORY:

NAME(S): **DUNEDIN**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 34 08 N
LONGITUDE: 123 54 45 W
ELEVATION: 1340 Metres

NORTHING: 6381082
EASTING: 445417

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Geology, Exploration and Mining in British Columbia 1973, Figure 47).

COMMODITIES: Barite Lead

MINERALS

SIGNIFICANT: Barite Galena
ALTERATION: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Stratabound
CLASSIFICATION: Replacement Epigenetic Hydrothermal Industrial Min.
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Undefined Group Dunedin

LITHOLOGY: Brecciated Siliceous Limestone
Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Dunedin showing is one of a number of zinc-lead showings located in Richard Creek valley. The valley exposes a conformable sequence of Middle to Lower Devonian Stone Formation dolomite, Middle Devonian Dunedin Formation micritic limestone and Devonian to Carboniferous Besa River Formation shale. This sequence is overthrust by a panel of Stone Formation and Dunedin Formation strata, which in turn is overthrust by a package of Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation and Silurian Nonda Formation rock.

The showing, hosted by brecciated siliceous Dunedin Formation limestone near the stratigraphic contact with overlying Besa River shales, consists of barite with trace galena.

BIBLIOGRAPHY

EMPR ASS RPT *4299
EMPR GEM 1972-489; *1973-471
EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73 (see Ric - 094G 010); Cominco Ltd., Map of Geology Surface Plan, Mineral Showings and Drill Hole Locations of the Ric Group, 1972-73 (see Ric - 094G 010))
EMPR P 1991-4, pp. 71-88
GSC MEM 373
GSC BULL No. 186, 1970
GSC OF 606

DATE CODED: 1992/03/17
DATE REVISED: 1992/04/24

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 033**

NATIONAL MINERAL INVENTORY:

NAME(S): **RIDGE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 35 02 N
LONGITUDE: 123 55 00 W
ELEVATION: 2042 Metres

NORTHING: 6382755
EASTING: 445190

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Geology, Exploration and Mining in British Columbia 1973, Figure 47).

COMMODITIES: Lead Zinc

MINERALS

SIGNIFICANT: Galena Hemimorphite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Replacement Epigenetic Hydrothermal
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Undefined Group	Stone	

LITHOLOGY: Brecciated Dolomite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Ridge showing area is underlain by three thrust panels. The lowest and most easterly panel of Middle Devonian Dunedin Formation limestone and Devonian to Carboniferous Besa River Formation shale is overthrust by Middle to Lower Stone Formation dolomite and Dunedin Formation limestone. This panel, in turn, is overthrust by Cambrian to Ordovician Kechika Group, Ordovician Skoki Formation and Silurian Nonda Formation strata.

Mineralization, consisting of disseminated galena and minor hemimorphite, is hosted in brecciated dolomite in the Stone Formation thrust panel near the stratigraphic contact with the overlying Dunedin Formation.

BIBLIOGRAPHY

EMPR ASS RPT *4299
EMPR GEM 1972-489; *1973-471
EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73 (see Ric - 094G 010); Cominco Ltd., Map of Geology Surface Plan, Mineral Showings and Drill Hole Locations of the Ric Group, 1972-73 (see Ric - 094G 010))
EMPR P 1991-4, pp. 71-88
GSC MEM 373
GSC BULL No. 186, 1970
GSC OF 606

DATE CODED: 1992/03/17
DATE REVISED: 1992/04/23

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 034**

NATIONAL MINERAL INVENTORY:

NAME(S): **FAIRY RIDGE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 20 33 N
LONGITUDE: 123 52 13 W
ELEVATION: 1450 Metres

NORTHING: 6355847
EASTING: 447620

LOCATION ACCURACY: Within 500M

COMMENTS: Central to the highest number of mineralized outcrops (Assessment Report 5551, Map 4).

COMMODITIES: Zinc Lead Barite

MINERALS

SIGNIFICANT: Sphalerite Galena Barite

ASSOCIATED: Dolomite

ALTERATION: Silica

ALTERATION TYPE: Silicific'n

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Podiform Massive Stratabound
CLASSIFICATION: Replacement Epigenetic Hydrothermal Industrial Min.
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Siliceous Dolomite
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

Fairy Ridge, on the south side of Redfern Lake, is underlain by an apparently conformable sequence of Middle to Lower Devonian Stone Formation dolomite and Middle Devonian Dunedin Formation carbonates. Mineralization, hosted in variably dolomitized and silicified reefal limestones of the Dunedin Formation, varies from disseminated sphalerite with minor galena in silicified dolomite, to sphalerite and galena disseminated in pods of massive barite. Thirteen mineralized zones are scattered for over one kilometre along Fairy Ridge.

BIBLIOGRAPHY

EMPR GEM 1973-468; 1974-315
EMPR ASS RPT 4529, 4530, 4531, 4532, *5179, *5551, 7705
EMPR EXPL 1975-E169; 1979-269
EMPR P 1991-4, pp. 71-88
GSC OF 606
GSC MEM 425
GSC BULL 186

DATE CODED: 1992/03/18
DATE REVISED: 1992/03/20

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 035**

NATIONAL MINERAL INVENTORY:

NAME(S): **LIMRIC**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 34 41 N
LONGITUDE: 123 53 47 W
ELEVATION: 1465 Metres

NORTHING: 6382089
EASTING: 446394

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of showing (Geology, Exploration, and Mining in British Columbia 1973, Figure 47).

COMMODITIES: Barite Lead

MINERALS

SIGNIFICANT: Barite Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Breccia
CLASSIFICATION: Replacement Epigenetic Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Brecciated Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Limric showing is located within the Richard Creek valley, which is underlain by a series of thrust panels of Cambrian to Carboniferous strata. The lowest thrust panel, comprised of a conformable sequence of Middle to Lower Devonian Stone Formation Dolomite, Middle Devonian Dunedin Formation micritic limestone and Devonian to Carboniferous Besa River Formation shale, is exposed in the lower reaches of Richards Creek. Mineralization, hosted in brecciated Dunedin Formation limestone, is comprised of trace galena with coarse crystalline clear calcite and barite.

BIBLIOGRAPHY

EMPR ASS RPT *4299
EMPR GEM 1972-489; *1973-471
EMPR PF *(Cominco Ltd., drill logs of the Ric Group, 1972-73;
Cominco Ltd., Map of Geology Surface Plan, Mineral Showings
and Drill Hole Locations of the Ric Group, 1972-73)
EMPR P 1991-4, pp. 71-88
GSC MEM 373
GSC BULL No. 186, 1970
GSC OF 606

DATE CODED: 1992/03/17
DATE REVISED: 1992/04/23

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094G 036**

NATIONAL MINERAL INVENTORY:

NAME(S): **COSBURN**, REDFERN

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094G05W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 57 22 08 N
LONGITUDE: 123 51 30 W
ELEVATION: 1890 Metres

NORTHING: 6358776
EASTING: 448376

LOCATION ACCURACY: Within 500M

COMMENTS: Centre of massive barite and fluorite zone (Assessment Report 5551, Map 4).

COMMODITIES: Barite Fluorite Lead

MINERALS

SIGNIFICANT: Barite Fluorite Galena

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Stratabound
CLASSIFICATION: Replacement Epigenetic Industrial Min.

TYPE: E10 Carbonate-hosted barite

SHAPE: Bladed

DIMENSION: 400 x 60 Metres

STRIKE/DIP: TREND/PLUNGE:

COMMENTS: Area of massive barite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Devonian

GROUP

Undefined Group

FORMATION

Dunedin

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Brecciated Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The central portion of the Redfern Lake area is underlain by Middle Devonian Dunedin Formation carbonates conformably overlying Middle to Lower Devonian Stone Formation dolomites. To the east, this package is thrust over Devonian to Carboniferous Besa River Formation shales. To the west, a conformable package of Cambrian to Ordovician Kechika Group, Middle Ordovician Skoki Formation, an unnamed Upper Ordovician unit, Silurian Nonda Formation, Lower Devonian Muncho-McConnell Formation, Lower to Middle Devonian Stone Formation and Middle Devonian Dunedin Formation strata are thrust over the Dunedin Formation.

On Cosburn Ridge, north of Redfern Lake, a large body (400 metres by 60 metres) of massive barite is hosted within Dunedin Formation limestone breccia of the central thrust panel. The barite contains local concentrations of pink fluorite and minor galena. Approximately 250 metres to the south, a second body of barite crosscuts bedding in the limestone. Limestone breccia blocks occur within the flat-lying barite.

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EMPR EXPL 1975-E169; 1979-269
EMPR GEM 1973-468; 1974-315
EMPR OF 1992-16
EMPR P 1991-4, pp. 71-88
EMPR PF (Cosburn, S.S., Callan, D.M. (1962): Preliminary Geological Report on the Redfern area, B.C. Department of Mines and Petroleum Resources)
GSC BULL 186
GSC MEM 425
GSC OF 606

DATE CODED: 1992/03/18
DATE REVISED: 1992/03/20

CODED BY: WHH
REVISED BY: WHH

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **0941 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **IMPERIAL KAHNTAH**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094107W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 16 10 N
LONGITUDE: 120 51 35 W
ELEVATION: 427 Metres

NORTHING: 6460704
EASTING: 625545

LOCATION ACCURACY: Within 500M

COMMENTS:

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Sedimentary
TYPE: I10 Vein barite

Stratabound
Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Mississippian

GROUP

Unnamed/Unknown Group

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Brecciated Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

At the Imperial Kahntah showing, barite occurs in brecciated dolomite of Mississippian age, 2.5 to 4 metres below the base of the Triassic at a depth of 596 metres. Fractures up to 2.5 centimetres wide are filled with barite. Some barite is also present in pores and fractures in the dolomite to a depth of 597 metres. The barite has a specific gravity of 4.5.

BIBLIOGRAPHY

Pugh, D.C.(1959): Barite in Northeastern British Columbia, Journal of Alberta Society of Petroleum Geologists, V. 7, No. 8, pp. 180-181
GSC MAP 1447A
GSC P 75-11
GSC BULL 328

DATE CODED: 1990/01/19
DATE REVISED: 1995/03/10

CODED BY: SBB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **NONDA CREEK**, MILE 428, PAT

STATUS: Developed Prospect

MINING DIVISION: Liard

REGIONS: British Columbia

NTS MAP: 094K13E

BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 57 25 N

LONGITUDE: 125 31 49 W

ELEVATION: 1980 Metres

NORTHING: 6538012

EASTING: 354470

LOCATION ACCURACY: Within 500M

COMMENTS: Located in middle of deposit on southwest-facing slope, 2.5 kilometres north of Nonda Creek, 14 kilometres east-northeast of the settlement of Muncho Lake on the Alaska Highway (Assessment Report 327, Map 2).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

ASSOCIATED: Calcite Witherite

COMMENTS: Possible witherite.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Discordant
CLASSIFICATION: Hydrothermal Replacement Industrial Min.

TYPE: I10 Vein barite

SHAPE: Bladed

DIMENSION: 600 x 45 x 30 Metres STRIKE/DIP: 360/85E

TREND/PLUNGE:

COMMENTS: Total surface length, and width and minimum depth of deposit, and its orientation.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Baritic Argillite
Limestone
Calcareous Shale
Calcareenite
Dolomite
Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: In a belt of north-northwest trending folds and thrust faults.

INVENTORY

ORE ZONE: VEIN

REPORT ON: Y

CATEGORY: Inferred

YEAR: 1960

QUANTITY: 450000 Tonnes

COMMODITY

GRADE

Barite

92.0000 Per cent

COMMENTS: Estimated reserves for upper part of deposit, measuring 120 metres by 45 metres by 30 metres depth, and including only purer barite.

REFERENCE: Assessment Report 327, page 8.

CAPSULE GEOLOGY

The Nonda Creek developed barite prospect is situated on a southwest-facing mountain slope, 2.5 kilometres north of Nonda Creek and 14 kilometres east-northeast of the settlement of Muncho Lake on the Alaska Highway (Assessment Report 327, Map 2).

The region is characterized by moderate, north-northwest trending folds and northeast-verging thrust faults in Paleozoic sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Maps 1343A, 1713A). The area between Muncho Lake and Nonda Creek is composed of deformed Silurian and Devonian rocks in a series of west-dipping thrust sheets.

The Nonda Creek occurrence is in the Middle Devonian Dunedin Formation, on the eastern limb of an anticline in the hangingwall of a thrust. The formation is generally composed of grey, well bedded

CAPSULE GEOLOGY

limestone, calcareous shale, and minor calcarenite and dolostone (Geological Survey of Canada Memoir 373). The Nonda Creek deposit, possibly of hydrothermal replacement origin, consists of a body or vein of barite which forms a white, resistant feature approximately 600 metres long, trending down the rubbly mountain slope. Its width is consistently 45 metres. It strikes north and dips very steeply east and is apparently discordant, possibly faulted, with respect to the adjacent, gently-dipping Dunedin limestone.

The deposit is not homogeneous nor mineralogically uniform. Some lenses within the body, 10 to 15 metres wide, are relatively pure, grading over 92 per cent barite (Assessment Report 327). Elsewhere the barite contains impurities of calcite and possibly witherite, but has the same white colour and so may be difficult to distinguish. Also, there are large lenses of mottled baritic argillite within the deposit.

The upper part of the deposit was analysed in order to estimate reserves. This zone was 120 metres long, 45 metres wide and 30 metres in depth; the last value is a conservative estimate as no drilling was done. Twenty-five samples were taken ranging from the pure baritic facies to marginal impure facies and country rock. Of importance is the high grade material which is generally between 95 and 98 per cent barium sulphate by weight (Assessment Report 327). After subtracting the volume of non- or weakly baritic rock, this upper body was estimated to contain 450,000 tonnes grading 92 per cent or more barite (Assessment Report 327).

BIBLIOGRAPHY

EMPR AR 1960-134
EMPR ASS RPT *327
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/13

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 002**

NATIONAL MINERAL INVENTORY: 94K/12 Cu 1

NAME(S): **TOAD, RELIANCE VEIN, FORT RELIANCE,
IT, BEAVER LAKE, AT,
TOAD RIVER**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094K12E

MINING DIVISION: Liard

BC MAP:
LATITUDE: 58 32 39 N
LONGITUDE: 125 43 34 W
ELEVATION: 1280 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6492517
EASTING: 341341

LOCATION ACCURACY: Within 500M

COMMENTS: Located on centre of mineralized zone, boundary between Toad 2 and Beaver Lake 2 claims, on slopes west of Toad River, 44 kilometres south of Muncho Lake, 25 kilometres west-northwest of Mount Roosevelt in Muskwa Ranges (Property File - Map of trenches and drill holes; Assessment Report 2547, Map 1).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Calcite Pyrite

ALTERATION: Malachite

COMMENTS: Malachite is extensive on surface.

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I06 Cu±Ag quartz veins

SHAPE: Bladed

DIMENSION: 200 x 60 x 2 Metres STRIKE/DIP: 010/70W

TREND/PLUNGE:

COMMENTS: Strike length, depth and average width of main, southern part of mineralized zone, and its orientation.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Slate
Silty Argillite
Diabase Dike
Quartz Calcite Vein

HOSTROCK COMMENTS: Aida Formation forms part of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Hanging-wall of Gataga thrust, western edge of Muskwa Anticlinorium.

INVENTORY

ORE ZONE: TRENCHES REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1959

SAMPLE TYPE: Chip

COMMODITY: Copper GRADE: 6.0000 Per cent

COMMENTS: Average grade derived from 9 trenches, over average width of 2.4 metres.

REFERENCE: Minister of Mines Annual Report 1959.

ORE ZONE: MAIN REPORT ON: Y

CATEGORY: Indicated YEAR: 1959

QUANTITY: 90710 Tonnes

COMMODITY: Copper GRADE: 4.5000 Per cent

COMMENTS: Reserves over 137 metres of strike length, depth to 60 metres, and average width of 1.5 metres.

REFERENCE: Prospectus, Fort Reliance Minerals 09/28/61, A.D. Wilmot, 09/20/61.

CAPSULE GEOLOGY

The Toad developed prospect is situated on the east-facing slopes immediately west of Toad River, 44 kilometres south of Muncho Lake, 25 kilometres west-northwest of Mount Roosevelt in the Muskwa Ranges of the Northern Rocky Mountains (Minister of Mines Annual Report 1959, Assessment Report 2547).

The occurrence lies in the hanging-wall of the Gataga thrust, on the western margin of the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting (Geological Survey of Canada Map 1343A). Like the main part of the anticlinorium to the east, the thrust sheet comprises Middle Proterozoic (Helikian) sedimentary rocks of the Muskwa Assemblage, and unconformably overlying Paleozoic rocks (Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The Toad deposit is in the Aida Formation of the Muskwa Assemblage, composed mainly of dolomitic mudstone, siltstone and dolostone (Geological Survey of Canada Memoir 373). Locally the unit consists of thinly bedded grey slate and silty argillite (Minister of Mines Annual Report 1959). Bedding generally strikes north and dips between 10 and 20 degrees west. The slaty cleavage strikes 330 degrees and dips 35 degrees southwest.

In the area of the mineralization, a 6-metre wide diabase dyke intrudes the sedimentary rocks, striking 350 degrees and dipping 75 degrees west. Mineralization occurs within a shear zone striking about 010 degrees and dipping 70 degrees west, slightly oblique to the dyke but crossing it without producing a significant offset (Property File - Map of surface trenches and drill holes). The shear zone north of its intersection with the dyke is narrow and not well mineralized.

The more important segment of the shear zone is that south of the dyke intersection. Chalcopyrite, quartz-calcite stringers, and minor pyrite occur in the shear zone over widths ranging from 1 to 4.25 metres. Between 25 and 50 per cent of the surface mineralization is in the form of malachite. In 1959, nine trenches were put in to evaluate the mineralization over a strike length of 200 metres. The average grade obtained was about 6 per cent copper over an average width of 2.4 metres (Minister of Mines Annual Report 1959).

In 1958, 442 metres of diamond drilling over 10 holes extended the depth of mineralization to about 30 metres (Property File - Drill hole logs; Minister of Mines Annual Report 1959; National Mineral Inventory). In 1959, another five holes were drilled, totalling 460 metres, confirming the shear zone's depth and width, but the grade was considerably less than that at the surface.

The drilling program indicated 90,710 tonnes averaging 4.5 per cent copper over a strike length of 137 metres and a vertical depth of 60 metres, and an average width of about 1.5 metres (National Mineral Inventory; Mineral Bulletin MR 223; Prospectus, Fort Reliance Minerals Ltd., September 28, 1961, A.D. Wilmot, September 20, 1961). No significant work was carried out thereafter, although renewed interest in the property was shown in 1992 (George Cross News Letter, Number 87, May 5).

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- EMPR GEM 1970-41
- EMPR ASS RPT 2547
- EMPR PF (*Drill hole logs, 1958; Map of surface trenches and drill holes)
- EMPR OF 1992-1
- EMR MP CORPFILE (Fort Reliance Minerals Limited; Consolidated Churchill Copper Corporation Ltd.)
- EMR MIN BULL MR 223 - B.C. 276
- GSC MEM 373
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
- GCNL #87 (May 5), 1992
- Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/23

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

headwaters of Magnum Creek, a tributary of Delano Creek, 8.5 kilometres north-northwest of Mount Roosevelt in the mountainous Muskwa Ranges of the Northern Rocky Mountains. It is centred on the 6100 level adit portal in the middle of the Magnum Mine zone (Assessment Report 3535, Map 3; Geology, Exploration and Mining in British Columbia 1971, Figure 11). The Churchill Mine road (present condition unknown) connects the mine workings with the nearby camp, and with the mill (now removed) farther downstream at the confluence of Delano Creek and Racing River. From there the road proceeds northeastwards to the Alaska Highway, joining it about 13 kilometres northwest of Summit Lake, for a total length of 56 kilometres.

The region is known for widespread vein-hosted copper mineralization, generally restricted to fracture systems in Proterozoic sedimentary rocks, but the Magnum Mine is the only deposit that has been brought to production. Discovered in 1943, it was explored and developed in the late 1950s and late 1960s. Mining was carried out on four levels intermittently between 1970 and 1975 (Mineral Bulletin MR 223), by which time it had produced 14,673 tonnes of copper from 501,019 tonnes of ore milled. Inferred reserves at Magnum at the time of mine closure were 90,710 tonnes grading 3 per cent copper (Northern Miner - May 8, 1975).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The showing occurs in the Aida Formation of the Muskwa Assemblage, which comprises shale or slate, dolomitic and calcareous shale, dolostone and minor limestone (Assessment Report 3535; Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). In the area around the Magnum Mine, the formation consists of a lower unit of dark grey thin-bedded calcareous shale and interbedded calcareous shale and limestone, and an upper unit of interbedded buff- to orange-weathering dolomitic shale and dolostone, locally containing beds of algal dolostone. A large number of diabase dykes cut the sedimentary rocks, ranging from a metre to about 100 metres in width and striking from northeast to east. There is minimal contact metamorphism of the sedimentary host rock, although the adjacent strata are commonly 'bleached' for several metres. The dykes are evenly distributed in the mine area and generally follow the same fracture and alteration zone that contains cupriferous quartz-ankerite veins. In the mine workings and surface showings, dykes are clearly post-mineralization, truncating the veins. Other dykes, locally known as "grey dykes", are known to cut transversely across the zone of mineralization and alteration, and individual veins, striking in a general northwest direction. These dykes are of trachytic composition, contain disseminations and stringers of pyrite, and are generally only a few metres wide.

The sedimentary rocks are deformed into a large number of folds which plunge gently to the south and southeast. These structures range from a metre to several hundred metres in amplitude and are invariably asymmetric, with gently-dipping west limbs and steep east limbs, and axial planes dipping to the west and southwest (Geology, Exploration and Mining in British Columbia 1971, Plate 3). The ubiquitous slaty cleavage in the Aida Formation rocks is parallel to the axial planes of these folds. In the Magnum Creek area, diabase dykes, fracture zones and cupriferous veins all have trends that are at a high angle to these fold structures, and are apparently not deformed by them. It appears that the dykes and veins filled a system of fractures, generally striking northeast, that developed after the folding and transverse to the fold axes.

Faults are not common on the property. A number of small faults and shear zones have been mapped, but none appear to be very large except at the Magnum Mine zone, where there has been considerable faulting. Most of these faults lie parallel to the zone and cut both mineralized veins and dykes, but within the mine workings at least two faults have been mapped which strike across the zone, dipping southwest at approximately 40 degrees, and are thought to displace ore shoots in a reverse manner.

Within the Magnum zone itself, the deformation is much more heterogeneous than that described above, shown by highly variable fold axes. The cleavage, partly curved and wavy, strikes predominantly south-southwest, with a dip of approximately 60 degrees to the east. In general, bedding dips gently to moderately southeast and apparently forms the southeast limb of a broad anticline, the

CAPSULE GEOLOGY

hinge zone of which approximately follows Magnum Creek. Also within this zone, the originally calcareous succession is conspicuously non-calcareous, the limestone and calcareous argillite having been extensively altered by decalcification to coarsely crystalline ferrodolomite and ankerite. The same alteration has produced abundant graphite in shale, locally with coarse ankerite crystals. In addition, pyrite was developed in the west part of the zone forming seams and disseminations roughly concordant with bedding.

Mineralization at the Magnum deposit occurs in cupriferous quartz-ankerite veins in the subvertical north- to northeast-striking shear and fracture zones. The local preservation between the principal veins of septa of schistose country rock or brecciated quartz stockworks suggests that the Magnum zone was originally controlled by a narrow shear zone (or zones) which was subsequently exploited by hydrothermal activity and later by dyke intrusion. In general, this zone of deformation, alteration, mineralization and dyke intrusion trends 035 degrees, dips steeply and is up to 90 metres wide. It has been partly explored for a length of 1375 metres and to a depth of 365 metres. As many as ten veins have been observed, concentrated in the centre of the zone, although some may prove to be extensions of others. They vary in width from less than 1 metre to as much as 7.6 metres and possess a continuity, both on strike and in depth, which may measure a hundred metres or more. As many as three parallel principal veins occur within a width of 45 metres or less across the zone. Numerous subsidiary veins are present, some of which are parallel to the principal veins, and others which have an oblique, northerly trend, and are probably branches of the principal veins.

In more detail, the veins consist of varying proportions of ankerite, quartz, chalcopyrite, and locally pyrite, together with partly replaced remnants of the sedimentary host rock. Very minor amounts of bornite have also been observed. Malachite and azurite are common on the surface. Pyrite is locally prominent, but is generally less than about 10 per cent of the total sulphides in the ore. Chalcopyrite is intimately associated with quartz, although in some places the quartz is so sparse that the vein appears to consist of massive chalcopyrite. Chalcopyrite tends to increase noticeably where a vein changes direction. Such jogs occur over only a metre or so and their shape is such as to displace the northern part of the vein west or, alternatively, the upper part westward by a metre (Canadian Institute of Mining, Transactions, 1971). The latter sense of displacement is effected also by at least one of several minor syn- and post-mineralization faults which occur in the northern part of the mine. These mineralized faults dip approximately 40 degrees southwest, and locally displace the upper parts of two principal veins about 9 metres west along the strike of the fault.

A post-ore diabase dyke of irregular shape and generally steep dip closely follows the southeast side of the vein system and invades it progressively southwards in the zone. The dyke is less than 3 metres wide in the northeast of the zone, but widens southwards and splits locally into two or more parallel branches with an aggregate width which may exceed 45 metres. In places, the dyke becomes sill-like; subsidiary dykes extend west across the vein system. Along part of its length, the main dyke is followed by one or more steep faults, with unknown displacement, near which the diabase is propylitically altered. In the northern part of the mine zone, the dyke adjoins one or more veins, and locally invades and obliterate them; this occurred more extensively in the southern part of the mine zone.

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- EMPR ASS RPT *3535
- EMPR BC METAL MM00278
- EMPR GEM 1969-50; 1970-43, 44; *1971-27, 81-89; 1973-478; 1974-26, 317
- EMPR MAP 65 (1989)
- EMPR MINING Vol.1 1975-1980, p. 15
- EMPR OF 1992-1
- EMPR PF (Klein, G.H. (1975): Report on Property Visit; *Carr, J.M. (1971): Geology of the Churchill Copper Deposit - photocopy of CIM Vol. 74 paper; Wright Engineers Report (1975); Claim map; Photographs)
- EMR MIN BULL MR 223 B.C. 275
- EMR MP CORPFILE (Magnum Consolidated Mining Co. Ltd.; Consolidated Churchill Copper Corporation Ltd.; Brameda Resources Ltd.; The Dickenson Group of Companies)
- GSC MAP 1343A; 1713A
- GSC MEM 373
- GSC P 72-32, p. 16

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1312
REPORT: RGEN0100

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N MINER May 22, 1969; Sept. 4, 1969; May 8, 1975
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DATE CODED: 1985/07/24
DATE REVISED: 1994/01/09

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 004**

NATIONAL MINERAL INVENTORY: 94K/10 Ba 1

NAME(S): **MILE 397**, ROCKY MOUNTAIN BARITE, L.2198,
GRB 1-4, BAR, RAB FR.,
JACK AND JILL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K10W
BC MAP:
LATITUDE: 58 40 35 N
LONGITUDE: 124 47 11 W
ELEVATION: 1325 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6505398
EASTING: 396414

COMMENTS: Located on vein in small creek gulley, a few hundred metres northeast of Alaska Highway, 9 kilometres west-northwest of Summit Lake (Open File 1992-16, Figure 20).

COMMODITIES: Barite Fluorite

MINERALS

SIGNIFICANT: Barite Fluorite
ASSOCIATED: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Breccia Discordant
CLASSIFICATION: Hydrothermal Replacement Epigenetic Industrial Min.
TYPE: I10 Vein barite
SHAPE: Irregular
DIMENSION: 60 x 30 Metres STRIKE/DIP: 335/60W TREND/PLUNGE:
COMMENTS: Length in plan and maximum width (in centre) of vein. Orientation of lower, discordant part of vein.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Undefined Group Dunedin

LITHOLOGY: Limestone
Calcarenite
Dolomite
Barite Vein

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated near northern end of Tuchodi Anticline.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1960
SAMPLE TYPE: Chip
COMMODITY GRADE
Barite 55.6700 Per cent
COMMENTS: Actually barium weight per cent given. Sample taken over 18 metres, near northern end of vein.
REFERENCE: Minister of Mines Annual Report 1960, page 134.

ORE ZONE: ROCK REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1992
SAMPLE TYPE: Rock
COMMODITY GRADE
Fluorite 73.6400 Per cent
COMMENTS: Sample of purple fluorite.
REFERENCE: Open File 1992-16, page 35.

CAPSULE GEOLOGY

The Mile 397 occurrence is situated around a small creek gulley, a few hundred metres northeast of the Alaska Highway, about 9 kilometres west-northwest of Summit Lake (Minister of Mines Annual Report 1960; Open File 1992-16, Figure 20).
The occurrence is in a region of folding and thrust faulting in Paleozoic sedimentary rocks just north of the Tuchodi Anticline, a

CAPSULE GEOLOGY

major structure in the Muskwa Ranges of the Northern Rocky Mountains, involving rocks belonging to Ancestral North America (Geological Survey of Canada Map 1713A). Around the Alaska Highway northeast of Summit Lake, the southwest-dipping limb of a subsidiary anticline has been partly detached and displaced on a reverse fault (Geological Survey of Canada Map 1343A). This several-kilometres wide fold limb or thrust panel consists mainly of Devonian rocks, including the Middle Devonian Dunedin Formation which hosts the Mile 397 occurrence (Open File 1992-16). The formation generally consists of dark grey to black, fetid, well bedded limestone, calcarenite and dolostone (Geological Survey of Canada Memoir 373). In this area, it strikes approximately 315 degrees and dips 35 degrees southwest, although small folds are present.

The barite forms an irregular vein-like mass that extends up the steep, north side of the creek, from its bed to the lip of the canyon 60 metres above it (Minister of Mines Annual Report 1960). For the lower 30 metres, the 'vein' strikes 335 degrees and dips 60 degrees west, cutting through the more gently dipping limestone. From there on upwards, the vein's dip decreases and it becomes almost parallel with the limestone's bedding. Some post-mineralization faulting is indicated by slickensides on the vein's upper surface. The vein is 6 metres wide at the creek, and widens to 30 metres halfway up, near the change in dip; at the top it is 20 metres wide. In plan, the exposure is roughly 60 metres long.

The lower surface of the vein is very irregular, with several apophyses of barite projecting into the limestone wallrock, some for a length of 25 metres or more. There is some brecciation along the vein margin, with inclusions of limestone in the barite. Considerable replacement of limestone by barite is indicated in this zone.

The barite is inhomogeneous. Part is massive, part is coarsely crystalline, and at the creek it is extremely friable. It is also present as smaller veins, as solution cavity fillings, and as rosettes or blades in the host limestone (Open File 1992-16, page 40). The main impurities that are visible are limestone, coarse white calcite, and minor purple fluorite (Open File 1992-16). An 18-metre chip sample, taken near the northern end of the exposure, was analysed at 55.67 per cent barium; the specific gravity of the sample was 4.36 (Minister of Mines Annual Report 1960). A sample of purple fluorite was analysed at 73.64 per cent CaF₂ (Open File 1992-16, page 35).

Small scattered lenses and veinlets of barite, fluorite and coarse white calcite are present in the area surrounding the main showing: on the slopes for a few kilometres along strike to the northwest and southeast, and up stream to the northeast for a few hundred metres (Minister of Mines Annual Report 1960). However, it does not appear that the deposit is significantly larger than the main vein.

BIBLIOGRAPHY

EMPR AR *1960-133-134
EMPR ASS RPT 327
EMPR OF *1992-16, pp. 38-40
EMPR PF (Claim map; Memo re Stone Mountain Park)
GSC BULL 186
GSC MEM 259-141; 373
GSC P 72-32, p. 16
GSC MAP 28-1963; 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/16

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094K 005**

NATIONAL MINERAL INVENTORY: 94K/12 Cu 3

NAME(S): **BILL**, DEB, NANNY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 29 28 N
LONGITUDE: 125 20 16 W
ELEVATION: 1400 Metres

NORTHING: 6485760
EASTING: 363730

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralization at fork in small tributary 2.5 kilometres north of Delano Creek, 5.5 kilometres south of Yedhe Mountain in Muskwa Ranges (Geology, Exploration and Mining in British Columbia 1971, Figure 11; 1967 claim map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 1 Metres STRIKE/DIP: 020/ TREND/PLUNGE:
COMMENTS: Average width of individual veins and their approximate strike.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Dolomite
Carbonaceous Shale
Dolomitic Mudstone
Dolomitic Siltstone
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

The Bill copper showing is located in the Bill 12 claim at a fork in a tributary known as Canyon Creek, 2.5 kilometres north of Delano Creek, 5.5 kilometres south of Yedhe Mountain in the Muskwa Ranges of the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia 1971, Figure 11; Vail, J.R. (1957) - thesis; 1967 claim map).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The Bill showing lies close to a thrust fault within the Aida Formation of the Muskwa Assemblage, a unit comprising mainly dolomitic mudstone and siltstone, and dolostone (Geological Survey of Canada Memoir 373). The showing consists of four copper-bearing quartz-carbonate veins, striking 020 degrees, in dolostone and carbonaceous shale (Geology, Exploration and Mining in British Columbia 1971, Figure 11 and page 87). The veins, each about 1 metre thick, are adjacent to a small shear in the footwall of the thrust, and are generally poorly and sporadically mineralized with chalcopyrite. The occurrence is also shown on the geological maps of Vail (1957 - thesis) as one of many vein-hosted copper showings in the region.

Immediately east of the Bill showing are the Nanny claims where

CAPSULE GEOLOGY

two electromagnetic anomalies are present over a diabase dyke with gossaneous alteration (Assessment Report 1042). Highly mineralized float was found there.

BIBLIOGRAPHY

EMPR GEM *1971-81, 87
EMPR ASS RPT 1042
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
EMR MP CORPFILE (Racing River Mines Limited, Canex Aerial Exploration Limited, Churchill Copper Corporation Limited)
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
Vail, J.R. (1957): Geology of the Racing River area, British Columbia; unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/29

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 006**

NATIONAL MINERAL INVENTORY: 94K/11 Cu 3

NAME(S): **RINGAROOMA CREEK, JOHN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K11W 094K06W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 30 05 N
LONGITUDE: 125 28 22 W
ELEVATION: 1646 Metres

NORTHING: 6487185
EASTING: 355905

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized veins, on Ringarooma Creek in centre of John claim group, 3 kilometres west of upper Magnum Creek, 10 kilometres northwest of Mount Roosevelt in Muskwa Ranges (Assessment Report 1892, Map 3).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
COMMENTS: Bornite is minor.
ASSOCIATED: Quartz Carbonate Pyrite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform Disseminated Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 3 Metres STRIKE/DIP: 030/90 TREND/PLUNGE:
COMMENTS: Maximum width of mineralized veins. General orientation of veins.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Diabase Dike
Calcareous Slate
Slate
Siltstone
Argillite
Quartz Carbonate Vein

HOSTROCK COMMENTS: Hosted in Proterozoic diabase dyke, intrusive into Aida Formation of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1966
SAMPLE TYPE: Chip
COMMODITY: Copper GRADE: 5.5700 Per cent
COMMENTS: Sample from Vein 1, over 2.44 metres.
REFERENCE: Assessment Report 1892, page 6.

CAPSULE GEOLOGY

This minor copper showing is situated on the informally named Ringarooma Creek, in the approximate centre of the John claim group, 3 kilometres west of upper Magnum Creek, 10 kilometres northwest of Mount Roosevelt in the Muskwa Ranges in the Northern Rocky Mountains (Assessment Report 1892, Map 3).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of

CAPSULE GEOLOGY

Canada Map 1713A). Northeast- to northwest-trending diabase dykes are common in the region.

The John claim group is underlain predominantly by the Aida Formation of the Muskwa Assemblage (Geological Survey of Canada Memoir 373). Locally, this unit comprises calcareous and non-calcareous shale, siltstone and argillite (Assessment Report 1892). These rocks are strongly folded, and are intruded by diabase dykes of Proterozoic age.

Mineralization is hosted in a few quartz veins which are restricted to a small area in a diabase dyke. These structurally controlled veins strike 030 degrees and dip steeply. They are parallel and range in width from 1 to 3 metres. Inclusions of dyke rock are common, and there is some silicification around the veins. The veins consist of quartz and coarse-grained carbonate, and are erratically mineralized with blebs and disseminations of chalcopyrite, and locally with minor bornite. Massive chalcopyrite may reach 10 centimetres in width. Pyrite may be present in places but is only about 10 per cent of the volume of the chalcopyrite. A chip sample from "Vein 1" assayed 5.57 per cent copper over 2.44 metres (Assessment Report 1892).

A diamond drill hole attempted in 1968 had to be abandoned before fully testing the target (Assessment Report 1892).

BIBLIOGRAPHY

- EMPR GEM 1969-51
- EMPR ASS RPT *1892
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
- Vail, J.R. (1957): Geology of the Racing River area, British Columbia; Unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/20

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 007**

NATIONAL MINERAL INVENTORY: 94K/11 Cu 4

NAME(S): **KID**, GOAT, PAUL

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K11E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 32 23 N
LONGITUDE: 125 05 53 W
ELEVATION: 1100 Metres

NORTHING: 6490709
EASTING: 377870

LOCATION ACCURACY: Within 500M

COMMENTS: Located on gossaneous zone between Kid 3 and 4 claims, on slopes immediately west of Racing River, 13.5 kilometres due east of Yedhe Mountain in Muskwa Ranges (Assessment Report 1042, Figure 2).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Pyrite
ALTERATION: Limonite
COMMENTS: Assumed to be present in gossan.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated Shear
CLASSIFICATION: Unknown
DIMENSION: 120 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: "Strike length" of mineralization.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Undefined Group	Undefined Formation	
Lower Silurian	Undefined Group	Nonda	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Diabase Dike
Dolomite
Sandstone
Shale
Quartzite
Limestone

HOSTROCK COMMENTS: Undifferentiated Silurian to Devonian Muncho-McConnell, Wokkpash and Stone formations may be present, and Mid-Proterozoic Tuchodi Formation

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Immediately west of Sentinel thrust, in Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is situated on the boundary between the Kid 3 and 4 claims, on a small creek immediately west of Racing River, 13.5 kilometres due east of Yedhe Mountain in the Muskwa Ranges in the Northern Rocky Mountains (Assessment Report 1042, Figure 2).

The occurrence is in an area of folding and complicated thrust faulting, immediately west of the Sentinel thrust, in a major, north-northwest trending structural region known as the Muskwa Anticlinorium. The Kid group of claims is underlain by rocks ranging from the Middle Proterozoic Tuchodi Formation, part of the Helikian Muskwa Assemblage, and unconformably overlying Silurian and Devonian sedimentary rock units (Geological Survey of Canada Memoir 373, Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A).

In more detail, the area around the mineralization is cut by a fault which offsets the contact between Lower to Middle Devonian dolostone, sandstone and shale, and older Paleozoic, either Cambrian or Silurian, quartzite (Assessment Report 1042). The stratigraphic units present probably include the Upper Silurian to Middle Devonian Muncho-McConnell, Wokkpash and Stone formations, and the Lower Silurian Nonda Formation. The Tuchodi Formation may also outcrop in the vicinity. Bedding strikes northwest and dips gently southwest, about 5 degrees, although tightly folded limestone and sandstone are

CAPSULE GEOLOGY

present adjacent to the fault. A diabase dyke, striking north-northeast and dipping 15 degrees northwest, intrudes the Devonian rocks.

There is much shearing and alteration in the immediate area, presumably related to the faulting. A large gossan occurs around the dyke, and is well exposed in the creek valley. Mineralization consists of massive pyrite and disseminated chalcopyrite and bornite. The mineralization has a "strike length" of about 120 metres (National Mineral Inventory). An electromagnetic anomaly was located here (Assessment Report 1042).

BIBLIOGRAPHY

EMPR AR 1967-291; 1968-34
EMPR ASS RPT *1042
EMR MP CORPFILE (Racing River Mines Ltd.)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
N MINER Dec. 11, 1969-1; Jan. 15, 1970-2

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/28

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 008**

NATIONAL MINERAL INVENTORY: 94K/11 Cu 8

NAME(S): **LEMJAY**, GOAT, PAUL,
MOOSE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K11E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 32 15 N
LONGITUDE: 125 11 38 W
ELEVATION: 2350 Metres

UTM ZONE: 10 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6490640
EASTING: 372284

COMMENTS: Located in centre of Lemjay claims, 4.5 kilometres northwest of Racing River, 8 kilometres east of Yedhe Mountain in Muskwa Ranges (1967 claim map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: Metres
COMMENTS: Apparent strike of Lemjay Vein.

STRIKE/DIP: 315/

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Proterozoic
Ordovician

GROUP

Undefined Group
Kechika

FORMATION

Tuchodi
Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Quartzite

HOSTROCK COMMENTS: Tuchodi Formation forms part of Helikian Muskwa Assemblage. Alternatively, mineralization may be hosted in Kechika Group.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Lemjay copper showing is provisionally located in the centre of the Lemjay claims, 4.5 kilometres northwest of Racing River, 8 kilometres east of Yedhe Mountain in the Muskwa Ranges in the Northern Rocky Mountains (1967 claim map).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A).

No specific geological description is available. One brief reference is in Assessment Report 1042, which deals with a number of other claim groups north of Delano Creek. In describing a pair of electromagnetic anomalies in the Goat claim group (which abuts the Lemjay claims), the report states that they are "on strike with the Lemjay showings, which contain economic deposits of copper ore . . . in a monoclinial fold in quartzite sediments" (Assessment Report 1042, page 6). Its location would suggest that the quartzite is part of the Tuchodi Formation of the Muskwa Assemblage (Geological Survey of Canada Memoir 373). Alternatively, the quartzite could be a minor component of the unconformably overlying Ordovician Kechika Group, which is also present in the claim group area.

The occurrence also appears as the northwest-striking, chalcopyrite-bearing "Lemjay Vein" on a regional map in an unrelated report, although the mineralization or setting are not described at all (R.S. Adamson (1971): Property File - Report on the Ram Creek property).

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1322
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR ASS RPT *1042
EMPR PF (Adamson, R.S. (1971): Summary Report on the Ram
Creek Property, dated January 31, 1971)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
EMR MP CORPFILE (Churchill Copper Corporation Limited, Canex Aerial
Exploration Limited)
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/29

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 009**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHURCHILL**, JED 1,3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 21 15 N
LONGITUDE: 125 11 35 W
ELEVATION: 2240 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6470233
EASTING: 371667

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located approximately on trenches in south of Jed 1, 3 claims, on slopes 2 kilometres west of Churchill Creek, 4 kilometres east of Falaise Mountain in Muskwa Ranges (Assessment Report 6471).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 1 Metres STRIKE/DIP: 355/90 TREND/PLUNGE:
COMMENTS: Typical width of mineralization. General orientation of veins in area, parallel to diabase dyke margins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Undefined Group Aida

LITHOLOGY: Dolomite
Slate
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation is part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1977
SAMPLE TYPE: Channel
COMMODITY GRADE
Copper 3.9100 Per cent
COMMENTS: Sample taken from trench, over 1.5 metres.
REFERENCE: Assessment Report 6471.

CAPSULE GEOLOGY

The Churchill copper showing is situated in the former Jed 1 and 3 claims in very rugged terrain, on a ridge 2 kilometres west of Churchill Creek, 4 kilometres east of Falaise Mountain in the Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 6471). A related occurrence, the Toro developed prospect (094K 050), is roughly 3 kilometres to the north (Geology, Exploration and Mining in British Columbia 1971, page 94).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A).

CAPSULE GEOLOGY

The Churchill showing is in the Aida Formation of the Muskwa Assemblage, which here consists of interbedded dolostone and slate (Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). The rocks are strongly folded about a northwesterly axis. Bedding strikes around 315 degrees and dips moderately southwest or locally northeast. The western part of the property is underlain by gently-west dipping clastics of the Cambrian Atan Group. The Aida Formation is intruded by a number of diabase dykes, clearly Proterozoic because they are truncated by the sub-Cambrian unconformity. The dykes strike just west of north and dip steeply.

The mineralization is hosted in quartz-carbonate veins, most of which follow the margins of the dykes, and is probably a continuation of that at the Toro occurrence to the north, as suggested by malachite traceable in the intervening cliffs (Assessment Report 6471). Few details are available. Chalcopyrite is reported to be present over a width of about 1.5 metres, and is locally massive over narrower widths. A channel sample taken over 1.5 metres from a trench was assayed at 3.91 per cent copper (Assessment Report 6471).

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EMPR AR 1965-12; 1966-18
EMPR GEM *1971-93
EMPR EXPL 1977-E218
EMPR ASS RPT *6471, 15090
EMR MP CORPFILE (Magnum Consolidated Mining Co. Ltd.; Canex Aerial Exploration Ltd.; Consolidated Churchill Copper Corporation Ltd.)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/15

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **ED**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 18 50 N
LONGITUDE: 125 07 42 W
ELEVATION: 1700 Metres

NORTHING: 6465628
EASTING: 375312

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized outcrop, 1.5 kilometres east of Churchill Creek, 9.5 kilometres north-northeast of Churchill Peak in Muskwa Ranges, Northern Rocky Mountains (Vail, J.R. (1957) - Thesis, Geological Map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Chalcocite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Discordant
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: Metres STRIKE/DIP: 360/90 TREND/PLUNGE:
COMMENTS: General attitude of mineralized, fracture-filling veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Dolomitic Mudstone
Dolomitic Siltstone
Basic Dike
Gabbroic Dike
Dolomite
Mudstone
Sandstone
Limestone

HOSTROCK COMMENTS: Helikian Aida Formation forms part of the Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several similar occurrences in the Muskwa Anticlinorium.

CAPSULE GEOLOGY

The Ed is a minor showing of copper mineralization, 9.5 kilometres north-northeast of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Vail, J.R. (1957) - Thesis, Geological Map).

The occurrence is in a region known as the Muskwa Anticlinorium, a major structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). This assemblage of carbonate and clastic rocks has been divided into seven formations. The Ed showing is in the Aida Formation, a 1200 to 1800-metre thick succession of dolomitic mudstone and siltstone, dolostone, and minor mudstone, sandstone and limestone (Geological Survey of Canada Memoir 373, Paper 67-68).

Although no details are available, the Ed is typical of several minor copper showings in this anticlinorium, all of which occur in quartz-carbonate veins (Vail, J.R. (1957) - Thesis). The veins fill fractures, generally spaced a few metres or tens of metres apart.

CAPSULE GEOLOGY

Individual veins are about 50 centimetres wide, and most cannot be traced very far. In many cases, the quartz-carbonate veins lie along the contacts of basic dykes (gabbroic dykes on Geological Survey of Canada Map 1343A) or near them, and here the zone of fracturing may be about 6 metres wide. Such fracture zones associated with dykes can locally be traced intermittently for about 350 metres.

Copper mineralization in the veins is sporadic and comprises chalcopyrite and, where weathered and oxidized, malachite. Only very minor, secondary chalcocite and limonite are present.

The mineralization is clearly structurally controlled given its association with the fracture-filling veins, which consistently strike north-northeast to north-northwest, and dip subvertically. Many of the copper-bearing veins in the region occur within a few kilometres west of the front of a large northeast-verging thrust, near the base of its hanging wall, and they may be related to subsidiary fracturing. This would imply that the mineralization is late Mesozoic to Tertiary, the age of the thrusting (Vail, J.R. (1957) - Thesis). Alternatively, the veining and mineralization was contemporaneous with the basic dyke intrusion, which is demonstrably Precambrian (Geology, Exploration and Mining in British Columbia 1971).

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- EMPR GEM 1971-75
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
- *Vail, J.R. (1957): Geology of the Racing River area, British Columbia; Unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/02

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 011**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANN**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 17 16 N
LONGITUDE: 125 01 18 W
ELEVATION: 1500 Metres

NORTHING: 6462529
EASTING: 381472

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized outcrop, on western tributary in headwaters of Racing River, 11.5 kilometres east-northeast of Churchill Peak in Muskwa Ranges, Northern Rocky Mountains (Vail, J.R. (1957) - Thesis, Geological Map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Chalcocite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Discordant
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: Metres STRIKE/DIP: 360/90 TREND/PLUNGE:
COMMENTS: General attitude of mineralized, fracture-filling veins.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Basic Dike
Gabbroic Dike
Dolomitic Mudstone
Dolomitic Siltstone
Dolomite
Mudstone
Sandstone
Limestone

HOSTROCK COMMENTS: Helikian Aida Formation forms part of the Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several similar occurrences in the Muskwa Anticlinorium.

CAPSULE GEOLOGY

The Ann is a minor showing of copper mineralization, in the headwaters of Racing River, 11.5 kilometres east-northeast of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Vail, J.R. (1957) - Thesis, Geological Map).

The occurrence is in a region known as the Muskwa Anticlinorium, a major structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). This assemblage of carbonate and clastic rocks has been divided into seven formations. The Ann showing is in the Aida Formation, a 1200 to 1800-metre thick succession of dolomitic mudstone and siltstone, dolostone, and minor mudstone, sandstone and limestone (Geological Survey of Canada Memoir 373, Paper 67-68).

Although no details are available, the Ann is typical of several minor copper showings in this anticlinorium, all of which occur in quartz-carbonate veins (Vail, J.R. (1957) - Thesis). The veins fill fractures, generally spaced a few metres or tens of metres apart.

CAPSULE GEOLOGY

Individual veins are about 50 centimetres wide, and most cannot be traced very far. In many cases, the quartz-carbonate veins lie along the contacts of basic dykes (gabbroic dykes on Geological Survey of Canada Map 1343A) or near them, and here the zone of fracturing may be about 6 metres wide. Such fracture zones associated with dykes can locally be traced intermittently for about 350 metres.

Copper mineralization in the veins is sporadic and comprises chalcopyrite and, where weathered and oxidized, malachite. Only very minor, secondary chalcocite and limonite are present.

The mineralization is clearly structurally controlled given its association with the fracture-filling veins, which consistently strike north-northeast to north-northwest, and dip subvertically. Many of the copper-bearing veins in the region occur within a few kilometres west of the front of a large northeast-verging thrust, near the base of its hanging wall, and they may be related to subsidiary fracturing. This would imply that the mineralization is late Mesozoic to Tertiary, the age of the thrusting (Vail, J.R. (1957) - Thesis). Alternatively, the veining and mineralization was contemporaneous with the basic dyke intrusion, which is demonstrably Precambrian (Geology, Exploration and Mining in British Columbia 1971).

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*Vail, J.R. (1957): Geology of the Racing River area, British Columbia; Unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/02

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 012**

NATIONAL MINERAL INVENTORY: 94K/11 Cu 2

NAME(S): **EAGLE** DAVIS-KEAYS, EAGLE-MIKE,
BONANZA, KEAYS, HARRIS,
PINK, VIEW, OSCAR,
BOB

MINING DIVISION: Liard

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094K11W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 33 10 N
LONGITUDE: 125 27 08 W
ELEVATION: 2135 Metres

NORTHING: 6492861
EASTING: 357311

LOCATION ACCURACY: Within 500M

COMMENTS: Located on adit portal (69 Level) on ridge 2 kilometres east of south fork (Caribou Creek) of Yedhe Creek, 7 kilometres west-northwest of Yedhe Mountain in Muskwa Ranges (Geology, Exploration and Mining in British Columbia 1971, Figure 9; Assessment Report 2388, Figure 70-3). See also National Mineral Inventory cards 94K/11 Cu 10, 11, 12, 13; 94K/11 Pb 1.

COMMODITIES: Copper Silver Lead Cobalt Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Covellite Galena Bornite

COMMENTS: Chalcopyrite is predominant. Galena and very minor bornite are restricted to Oscar and Bob veins.

ASSOCIATED: Quartz Carbonate Calcite Siderite Pyrite
ALTERATION: Silica Dolomite Ankerite Limonite Malachite
Azurite Erythrite Graphite

COMMENTS: Erythrite is restricted.

ALTERATION TYPE: Silicific'n Carbonate Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform Massive Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

SHAPE: Irregular

MODIFIER: Faulted

DIMENSION: 1375 x 500 x 1 Metres STRIKE/DIP: 036/85W TREND/PLUNGE:

COMMENTS: Eagle-Mike vein system. Faulting of vein is minor. Note that this occurrence covers several other veins over a wider area.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Shale
Dolomitic Shale
Calcareous Shale
Dolomite
Limestone
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: EAGLE

REPORT ON: Y

CATEGORY: Indicated YEAR: 1971
QUANTITY: 128808 Tonnes

COMMODITY: Copper GRADE: 2.9200 Per cent

COMMENTS: Probable reserves.

REFERENCE: VSE SMF July 4, 1972 - Davis-Keays Mining Company Ltd., June 1971.

CAPSULE GEOLOGY

section of the lower workings. Average vein width is 1.2 metres but considerable variation exists, mostly in the range of 0.3 to 2.7 metres, giving the vein a complex lenticular form rather than a uniform tabular shape (Assessment Report 2388). Despite abundant post-mineralization faults, the vein is essentially continuous.

Faults within this zone are commonly parallel to both walls of the vein but are rare and of limited extent across the plane of the vein. Only two faults with significant lateral offsets (3 to 6 metres) are known. Rock alteration along or near the northeast trending fracture planes, which locally are occupied by veins, commonly include development of graphite and iron-rich dolomite and ankerite. Adjacent to the vein, the wallrocks have undergone various degrees of silicification and decalcification. Contacts between vein and altered wallrock are sharp.

Sulphides occur in both massive and disseminated form. Chalcopyrite is the most abundant (80 to 90 per cent of total sulphides), with pyrite and negligible covellite. Chalcopyrite is commonly present as massive patches of large anhedral grains. Less commonly, it forms a fine, fracture-filling in the earlier pyrite. Pyrite forms small irregular masses or individual grains distributed unevenly throughout the vein. Covellite occurs sporadically throughout the underground workings in very minor amounts, principally as a thin rim around some chalcopyrite grains and along thin irregular fractures within pyrite grains. Oxidation at and near the surface, and along some fracture zones, has produced abundant limonite, malachite and azurite locally. The majority of the vein, however, is essentially unoxidized. Gangue is principally quartz with lesser but variable amounts of carbonate in the form of calcite or siderite.

Indicated (probable) reserves at the Eagle property are 128,808 tonnes grading 2.92 per cent copper; semi-proven reserves are 1,119,089 tonnes grading 3.43 per cent copper (Statement of Material Facts July 4, 1972 - Davis-Keays Mining Company Ltd., Chapman, Wood and Griswold, June 1971).

The Keays vein and Keays North vein showings lie 2.75 and 2 kilometres, respectively, southwest of the southernmost exposures of the Eagle-Mike vein and are roughly on strike with it. The Keays North vein is 0.75 to 1 metre wide and very poorly mineralized or barren on the surface. The Keays vein yielded assays averaging 3.57 per cent copper across 2.4 metres over a length of 67 metres (Geology, Exploration and Mining in British Columbia 1971). Drilling in 1969 suggests that the Keays vein does not connect with the Keays North vein, and its width and grade do not continue with depth (Assessment Report 2388).

The William vein is 1 kilometre north of the Keays vein. Chalcopyrite is reported in quartz-carbonate vein zones.

The Harris vein is 2 kilometres south of the Eagle-Mike vein (Assessment Report 1128; Property File - Prospectus, Mango Resources Limited, 1988). Chalcopyrite-bearing quartz veins up to 2.6 metres thick yielded assays averaging 3.77 per cent copper across 2.1 metres over a 150 metre strike length, but subsequently, a limited amount of underground work (130 metres) and considerable diamond drilling indicated that the vein quickly wanes at depth and to the north (Geology, Mining and Exploration in British Columbia 1971). The Creek vein, 200 metres north of the Harris vein, does not appear to be of good grade or width on the surface.

The Pink vein, 200 metres east-northeast of the Harris vein, is very irregular and of limited horizontal continuity, and appears to be cut by a northeast-trending diabase dyke. This vein is characterized by the common occurrence of erythrite; cobalt assays up to 0.5 per cent (Assessment Report 1128) and 0.61 per cent (Property File - Prospectus, Mango Resources Limited, 1988) have been reported. A chip sample taken from the best section of this vein assayed 3.76 per cent copper and a trace of silver across 76 centimetres (Geology, Exploration and Mining in British Columbia 1971).

The View showing, halfway between the Eagle-Mike and Harris-Pink vein systems, comprises two hand trenches 90 metres apart exposing massive chalcopyrite in quartz-calcite veins. A grab sample from the lower trench assayed 5.75 per cent copper over a width of 1.5 metres (Property File - Adamson, R.S. (1967): Summary Report).

The Ridge vein is 350 metres southeast of the View showing and 900 metres northeast of the Harris vein. It is largely covered by scree, but was exposed by hand trenching, revealing semi-massive chalcopyrite mineralization which assayed 1.35 per cent copper over 1.2 metres (Property File - Adamson, R.S. (1967): Summary Report).

The Sheep vein, located approximately 1.3 kilometres northwest of the Eagle vein, is based only on a train of mineralized boulders in the extensive scree (Assessment Report 2388).

The Northeast vein comprises four small veins in interbedded

CAPSULE GEOLOGY

buff-weathering dolostone and shale. They lie 2 kilometres northeast of, and approximately on strike with the Eagle vein structure. The veins are between 30 and 60 centimetres wide and are of limited horizontal extent. Two chip samples taken across some of the best mineralized material assayed 6.54 per cent copper and 41.1 grams per tonne silver across 27 centimetres (Geology, Exploration and Mining in British Columbia 1971).

The Don vein is 2.75 kilometres northwest of the Sheep vein and is also reported to contain chalcopyrite in quartz-carbonate veins

The Oscar and Bob veins are quite different from the copper-bearing veins, despite being situated right among them (Assessment Report 1128). The Oscar vein is approximately 650 metres southwest of the Eagle-Mike vein. The width and extent are unknown because of extensive scree cover, but appears to be modest. As indicated by float, the vein trends southeast, along the regional cleavage and transverse to the trend of all other veins. The mineralization consists of massive and semi-massive galena, with a trace of bornite locally, a grab sample of which assayed 84.21 per cent lead, 0.05 per cent copper, 0.44 per cent zinc and 236.5 grams per tonne silver (Geology, Exploration and Mining in British Columbia 1971; Assessment Report 1128). The Bob vein is 600 metres north of the Oscar vein and contains massive galena mineralization. One 4-metre chip sample assayed 26.75 per cent lead and 182 grams per tonne silver (Assessment Report 1128).

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EMR MIN BULL MR 223 B.C. 274 (VSE Statement of Material Facts, Davis-Keays Mining Co. Ltd.)
EMR MP CORPFILE (Davis-Keays Mining Co. Ltd.; Kam-Kotia Mines Limited; Dickenson Mines Limited)
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GSC MEM 373
CIM BULL Vol. 67 (June 1974), pp. 131-142
GCNL #87, May 5, 1992
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2)
N MINER Oct. 16, 1969
W MINER Nov. 1970-28
WWW <http://www.infomine.com/>
Vail, J.R. (1957): Geology of the Racing River area, British Columbia; unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/01/06

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **094K 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAGNUM CREEK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 29 07 N
LONGITUDE: 125 23 21 W
ELEVATION: 1920 Metres

NORTHING: 6485216
EASTING: 360712

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized veins on slopes 1 kilometre east of Magnum Creek, 2.75 kilometres north of its junction with Delano Creek in the Muskwa Ranges (Geology, Exploration and Mining in British Columbia 1971, Figure 11).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Bornite Hematite
COMMENTS: Specular hematite.
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: Metres
COMMENTS: Strike of shear zones hosting mineralized veins.

STRIKE/DIP: 360/

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Calcareous Slate
Dolomitic Slate
Limestone
Dolomite
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Magnum Creek copper showing is located 1 kilometre east of Magnum Creek, 2.75 kilometres north-northwest of its junction with Delano Creek in the Muskwa Ranges of the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia 1971, Figure 11).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The showing is hosted by the Aida Formation of the Muskwa Assemblage, which here consists of dark grey, calcareous and dolomitic slate, limestone and dolostone (Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). Locally, bedding dips gently and the strike is variable. Slaty cleavage dips moderately southwest. North-striking shear zones cut the rocks and contain narrow quartz-carbonate veins well mineralized with bornite and specular hematite.

A good description of mineralized float material found in creeks on the Mac 3 and 5 claims, almost certainly derived from the Magnum Creek showing immediately to the east, is given in Assessment Report 3535, pages 14 and 15.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1334
REPORT: RGEN0100

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North America, Volume G-2).

DATE CODED: 1990/07/11
DATE REVISED: 1994/12/30

CODED BY: GO
REVISED BY: CJR

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094K 014**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAC**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 29 03 N
LONGITUDE: 125 25 25 W
ELEVATION: 1890 Metres

NORTHING: 6485164
EASTING: 358700

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein breccia on Mac 51 claim, 1 kilometre west of Magnum Creek, 7 kilometres northwest of Mount Roosevelt in Muskwa Ranges (Assessment Report 3535, Map 3).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Ankerite Pyrite
ALTERATION: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
DIMENSION: 7 x 7 Metres STRIKE/DIP: 350/70W TREND/PLUNGE:
COMMENTS: Surface area of mineralized quartz vein breccia. Orientation of shear zone and mineralized vein which emanate northwards from breccia zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Slate
Dolomitic Slate
Calcareous Slate
Dolomite
Limestone
Diabase Dike
Quartz Ankerite Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: MAC REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1971
SAMPLE TYPE: Chip
COMMODITY GRADE
Copper 6.1800 Per cent
COMMENTS: Sample 5809, from quartz vein breccia, taken over 4.5 metres.
REFERENCE: Assessment Report 3535.

CAPSULE GEOLOGY

The Mac copper showing is situated on the Mac 51 claim, on a steep, north-facing slope 1 kilometre west of Magnum Creek, 7 kilometres northwest of Mount Roosevelt in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 3535, Map 3; Geology, Exploration and Mining in British Columbia 1971). The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111,

CAPSULE GEOLOGY

639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The showing occurs in the Aida Formation of the Muskwa Assemblage, which comprises slate, dolomitic and calcareous slate, dolostone and minor limestone (Assessment Report 3535; Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). Rocks in the area are generally folded, but around the showing bedding strikes about 280 degrees and dips 15 degrees south. Slaty cleavage strikes northwest and dips moderately southwest. The rocks are intruded by dark green, fine-grained diabase dykes which range from 1 to 30 metres in thickness. In this area they strike northeast and dip 70 degrees northwest.

The Mac showing is centred on a zone of mineralized, quartz vein breccia in silicified sedimentary rocks, at the intersection of a north-northwest striking shear-hosted vein and a northeast-striking vein-dyke system. The breccia zone is about 7.5 by 7.5 metres, and is intruded by a network of diabase stringers, demonstrating that, here at least, dyke intrusion post-dated veining and mineralization. The breccia is well mineralized with chalcopyrite and lesser pyrite. A 4.5-metre chip sample in the breccia zone assayed 6.18 per cent copper (Assessment Report 3535). The dykes may also be weakly mineralized.

To the north, the mineralization extends along a shear zone for about 180 metres as a sheeted, quartz-ankerite vein, 1 to 2 metres wide, with chalcopyrite and pyrite (Geology, Exploration and Mining in British Columbia 1971, page 87). It strikes 350 degrees and dips 70 degrees west. A 0.75-metre chip sample here assayed 1.52 per cent copper (Assessment Report 3535). Still farther north, the vein gets thinner and more sparsely mineralized, before dying out.

The Mac showing is on strike with the Magnum Mine zone, 3 kilometres to the north-northeast, but they are apparently not connected (Assessment Report 3535).

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- EMPR ASS RPT *3535
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- GSC P 67-68
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DATE CODED: 1990/07/11
DATE REVISED: 1995/01/03

CODED BY: GO
REVISED BY: CJR

FIELD CHECK: Y
FIELD CHECK: N

CAPSULE GEOLOGY

America, Volume G-2, page 111). Structurally-controlled, diabase or gabbroic dykes of Proterozoic age are common in the region.

The 428 claim group is underlain mainly by the Aida Formation of the Muskwa Assemblage, comprising argillaceous limestone, black slaty argillite, and dolostone (Geological Survey of Canada Memoir 373, Paper 67-68; Assessment Reports 2644, 3318, 10960). The strata strike northwest and dip gently to moderately southwest. They are intruded by diabase dykes which strike north or north-northwest and dip steeply west.

A major fault zone passes through the centre of the claim group, striking north to northwest and dipping west about 70 degrees. It can be traced for over 3 kilometres, and is generally 15 to 60 metres wide. The fault zone is important as it contains numerous mineralized quartz-carbonate veins and vein systems. The mineralization is intermittent but can be assigned to three main areas (Geology, Exploration and Mining in British Columbia 1971). This occurrence, the 428 North, is in the north of the belt (the other areas to the south are covered by MINFILE occurrences: 428 Central and 428 South, 094K 030 and 055, respectively). It is much smaller than the others but otherwise typical. The veins generally strike around north and dip steeply west to vertically. Most veins are discontinuous and lenticular, and 1 metre or less in width. Some veins follow the margins of dykes in the fault zone, which may be sheared; others may be concordant with the prominent slaty cleavage in the sedimentary country rocks. The quartz-carbonate (ankerite) veins are mineralized with irregular masses, lenses or disseminations of chalcopyrite.

High assay values have been obtained from highly mineralized sections, such as 2.68 per cent copper over 0.9 metre (Assessment Report 2644, Geology Map), but this is not representative of the grade of the whole belt which is lower and quite erratic (Assessment Report 3318).

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- EMPR ASS RPT *2644, 3318, 10960
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- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/22

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **GUT**, FALLS, CHODI

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094K03W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 09 30 N
LONGITUDE: 125 29 05 W
ELEVATION: 930 Metres

NORTHING: 6449032
EASTING: 353799

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Gut showing on the boundary between Chodi 11 and 12 claims, on Gataga River, 19 kilometres southwest of Churchill Peak in Muskwa Ranges (Assessment Report 9540, Plate 6).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
COMMENTS: Sphalerite is yellow or pale red-brown, indicating high zinc/iron ratio.

ASSOCIATED: Pyrite
COMMENTS: Pyrite is dominant sulphide.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated Massive Podiform
CLASSIFICATION: Hydrothermal Replacement

SHAPE: Tabular

DIMENSION: 3 Metres STRIKE/DIP: 324/30W

TREND/PLUNGE:

COMMENTS: Attitude of thicker mineralized band (concordant with bedding) and its maximum thickness.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic Cambrian	Undefined Group Atan	Aida Undefined Formation	

LITHOLOGY: Dolomite
Dolomitic Breccia
Quartz Sandstone
Shale
Slaty Argillite
Limestone

HOSTROCK COMMENTS: Age of host rocks uncertain. Could be Aida Formation of the Helikian Muskwa Assemblage, or Cambrian Atan Group.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated on western edge of northwest-trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Chip
COMMODITY GRADE
Zinc 6.2500 Per cent

COMMENTS: Sample 9126, taken over 3 metres, through thicker mineralized band.
REFERENCE: Assessment Report 9540, Plate 9.

CAPSULE GEOLOGY

The Gut zinc prospect is situated on the boundary between the Chodi 11 and 12 claims, on the Gataga River, 19 kilometres southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 9540, Plate 6). The subordinate Falls showing is 300 metres to the northwest.

The occurrence is on the western edge of the Muskwa Anticlinorium, a major regional structure characterized by thrust faulting and moderate folding. Exposed in the structure are Middle Proterozoic clastic and carbonate rocks of the Helikian Muskwa Assemblage, and unconformably overlying Cambrian and younger Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological

CAPSULE GEOLOGY

Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1343A).

Regional geological mapping would place the Gut showing within the Gataga Formation of the Muskwa Assemblage, which is dominated by carbonaceous mudstone and siltstone (Geological Survey of Canada Map 1343A, Memoir 373). Property mapping, however, indicates that this and the nearby Red and Goat MINFILE showings (094K 028 and 056, respectively) occur near the contact between a Cambrian dolostone unit and an overlying unit of quartz sandstone, shale and argillite, and limestone (probably all Atan Group) (Assessment Report 9540). Given the regional setting, though, this succession is perhaps more compatible with the contact between the Gataga Formation and dolomitic rocks of the underlying Aida Formation; this suggestion is tentative. Stromatolites and cryptalgal laminae are reported from the dolostone. The strata are gently to moderately folded, and strike about 320 degrees and dip 35 degrees southwest. Argillaceous rocks are well cleaved.

Mineralization is generally confined to the uppermost 10 metres of the dolostone and dolomitic breccia unit. It consists of pyrite and sphalerite in two mineralized bands, the larger one 2 to 3 metres thick, parallel to bedding in the dolostone, which here strikes about 324 degrees and dips 30 degrees southwest. Fine-grained pyrite occurs in massive lenses up to 20 centimetres thick, and in vertical stockwork zones. Sphalerite, usually yellow or pale red-brown (indicating a high zinc/iron ratio), occurs as disseminated grains and massive pods up to 2 centimetres across, or in coarse-grained bands alternating with bands of pyrite. Pyrite and sphalerite may also locally contribute to the matrix in dolomitic breccia.

Chip sample 9126, taken obliquely through the thicker band, assayed 6.25 per cent zinc over 3 metres (Assessment Report 9540, Plate 9). At the Falls showing, 300 metres to the northwest, a chip sample (91217) assayed 0.96 per cent zinc over 3.5 metres (Assessment Report 9540, Plate 10).

From the textures and the association of the sulphides with recrystallization in the dolostone, it has been proposed that the mineralization is a carbonate-hosted, replacement-type massive sulphide deposit (Assessment Report 9540).

BIBLIOGRAPHY

- EMPR EXPL 1981-59
- EMPR ASS RPT *9540
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1994/11/29
DATE REVISED: 1994/11/30

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 017**

NATIONAL MINERAL INVENTORY: 94K/6 Cu 4

NAME(S): **HD, BE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 17 01 N
LONGITUDE: 125 23 50 W
ELEVATION: 2165 Metres

NORTHING: 6462788
EASTING: 359443

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein on ridge adjacent to HD claim group, 9.5 kilometres west-northwest of Tehran Peak in Muskwa Ranges (Assessment Report 2924, Map 3).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: Metres STRIKE/DIP: 330/80W
COMMENTS: Approximate, general attitude of veins, up to 15 centimetres wide, assuming structural control similar to dyke orientation.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Gataga	

LITHOLOGY: Shale
Slate

HOSTROCK COMMENTS: Gataga Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

This minor copper showing is on a ridge adjacent to part of the HD claim group, 9.5 kilometres west-northwest of Tehran Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2924, Map 3).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Exposed in the structure are Middle Proterozoic (Helikian) carbonate and clastic rocks of the Muskwa Assemblage, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Diabase or gabbroic dykes of Proterozoic age are common in the region.

The eastern part of the HD claim group is underlain by shale and slate of the Gataga Formation of the Muskwa Assemblage (Geological Survey of Canada Memoir 373, Paper 67-68; Assessment Reports 2924, 10960). The strata strike northwest and dip gently to moderately southwest. Numerous diabase dykes intrude the rocks, striking about 330 degrees and dipping steeply west. Sedimentary rocks of the Cambrian Atan Group underlie the western part of the claim group, but host no documented mineralization.

Very few details of the mineralization in the claim group are available. It is confined to the Gataga Formation and consists of fracture-filling quartz veins closely associated with diabase dykes. This occurrence is centred on quartz veins, 7.5 to 15 centimetres wide, mineralized with chalcopyrite and malachite (Assessment Report 2924, Map 3).

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1342
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR GEM 1971-95
EMPR EXPL 1982-348
EMPR ASS RPT *2924, 10960
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/30

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 018**

NATIONAL MINERAL INVENTORY: 94K/6 Cu 3

NAME(S): **LADY LUCK**, LOLI, JED 2,
LADY, BOX, NIP

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094K06W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 28 19 N
LONGITUDE: 125 24 23 W
ELEVATION: 1770 Metres

UTM ZONE: 10 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6483768
EASTING: 359655

COMMENTS: Located on Lady Luck mine, at end of Largo Mine road, 2 kilometres northwest of confluence of Magnum and Delano creeks in Muskwa Ranges (Geology, Exploration and Mining in British Columbia 1971, Figure 11).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
DIMENSION: 200 x 1 Metres STRIKE/DIP: 360/50W TREND/PLUNGE:
COMMENTS: Apparent length of mineralized veins and maximum vein width. General, average orientation of veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Dolomite
Slate
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

The Lady Luck developed prospect is situated at the end of the Largo Mine road on the southwestern side of Magnum Creek, 2 kilometres northwest of its confluence with Delano Creek in the Muskwa Ranges in the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia 1971, Figure 11).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The occurrence is hosted in interbedded, dark grey dolostone and slate of the Aida Formation of the Muskwa Assemblage (Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). Locally, bedding strikes north-northeast and dips moderately east. Copper mineralization occurs in a number of quartz-carbonate veins which strike north-northeast to north-northwest and dip gently to steeply west (Geology, Exploration and Mining in British Columbia 1971). The Lady Vein system trends north-northwest (Assessment Report 3535, page 14). The veins range in width from a few centimetres to about 90 centimetres. High assays have been obtained from the surface showings, but in general chalcopyrite is discontinuously and irregularly distributed in the

CAPSULE GEOLOGY

veins; many are barren. The veins were followed southwards underground for about 200 metres before being truncated by a system of branching diabase dykes.

Underground development in 1969 and 1970 consisted of about 300 metres of drifts and crosscuts, and a 78-metre raise (Geology, Exploration and Mining in British Columbia 1969, 1970).

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GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
N MINER June 26, 1969-24; July 24, 1969-1
W MINER July 1969-20; Oct. 1969-134; Apr. 1969-160; Sept. 1968-19; Oct. 1968-152

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/20

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 019**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 7

NAME(S): **BOOK 6**, BOOK (NORTH ZONE), BOOK VEIN,
BE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 09 58 N
LONGITUDE: 125 16 36 W
ELEVATION: 1960 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6449465
EASTING: 366067

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized veins in northeast corner of Book 6 claim, 4 kilometres north of Gataga River, 10 kilometres south-southwest of Churchill Peak in the Muskwa Ranges (Assessment Report 2638, Geological Map).

COMMODITIES: Copper Lead Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Galena Sphalerite

COMMENTS: Sphalerite reported in diamond drill core.

ASSOCIATED: Quartz Calcite Dolomite Pyrite

ALTERATION: Malachite Azurite Limonite

ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I06 Cu±Ag quartz veins

SHAPE: Tabular

DIMENSION: 500 x 1 Metres STRIKE/DIP: 360/68W

TREND/PLUNGE:

COMMENTS: Strike length and typical thickness of veins. Orientation of main vein. Mineralized veins are structurally controlled, in a north-trending reverse fault zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Dolomite
Dolomitic Siltstone
Argillaceous Limestone
Slaty Argillite
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation is part of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is situated in the northeast corner of the Book 6 claim, 4 kilometres north of the Gataga River, 10 kilometres south-southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2638, Geology Map).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111).

Northeast to (more commonly) north-northwest trending, steeply-dipping diabase or gabbroic dykes are common in the region. These Proterozoic intrusions were structurally-controlled as their presence and orientation are closely related to regionally important fault and fracture zones in the Proterozoic sedimentary rocks.

The Book claim group is underlain mainly by the Aida Formation

CAPSULE GEOLOGY

of the Muskwa Assemblage, comprising dolomitic siltstone, dolostone, argillaceous limestone and slaty argillite (Assessment Reports 2638, 5777, 10960; Geological Survey of Canada Memoir 373, Paper 67-68). Slate, argillite and siltstone of the overlying Gataga Formation outcrop around the edge of the claim group. The strata strike north-northwest and dip moderately east or west. Some isoclinal folding is present. Slaty cleavage strikes northwest and dips moderately southwest. A number of diabase dykes, 3 to 60 metres thick, in the north and centre of the area strike northeast to northwest and dip moderately to steeply west. Fault and fracture zones in the sedimentary rocks also strike northeast to northwest.

An east-verging reverse fault zone up to 180 metres wide can be traced from north to south. Some margins of dykes which lie in this zone are sheared. The zone is important as it hosts many mineralized quartz-carbonate veins (Assessment Reports 2638, 5777, 10960). Some occur along the margins of dykes. This occurrence is centred on quartz-rich veins with minor calcite and dolomite in the north of the claim group, on Book 6, extending into Book 4. This has been referred to as the North zone (Geology, Exploration and Mining in British Columbia 1971). The main vein has a strike length of about 500 metres, dips 68 degrees west, and ranges from 1 to 1.5 metres in thickness. It is mineralized with disseminations, stringers and lenses of chalcopyrite, locally sub-massive, visually estimated at 2 to 5 per cent or greater (Assessment Report 2638). Coarse disseminated galena and fine-grained pyrite also occur in places. Fine- to medium-grained sphalerite has been seen in diamond drill core (Assessment Report 5777). Local oxidation has produced limonitic gossan, and minor malachite and azurite.

This mode of mineralization extends intermittently for nearly 2 kilometres south of this occurrence, where it is covered by the Book 9-10 occurrence (MINFILE 094K 052).

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- EMPR GEM 1970-47; 1971-100, 101; 1975-E170
EMPR EXPL 1982-348
EMPR ASS RPT 2487, *2638, 2837, 5777, 10960
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/16

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 020**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 4

NAME(S): **GATAGA 19**, GATAGA SOUTH ZONE, BE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 12 24 N
LONGITUDE: 125 20 52 W
ELEVATION: 1460 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6454122
EASTING: 362042

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Showing No. 1 in Gataga 19 claim, 9 kilometres north of Gataga River, 9.5 kilometres west-southwest of Churchill Peak in Muskwa Ranges (Assessment Report 2639, Map 1).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate Calcite Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Podiform
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: 106 Cu±Ag quartz veins
DIMENSION: 60 x 1 Metres STRIKE/DIP: 330/65W TREND/PLUNGE:
COMMENTS: Approximate orientation, and maximum length and width (0.6 metre) of mineralized veins.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Gataga	
Middle Proterozoic	Undefined Group	Aida	
Proterozoic			Unnamed/Unknown Informal

LITHOLOGY: Diabase Dike
Dolomitic Siltstone
Argillaceous Limestone
Argillite
Slaty Mudstone
Slaty Siltstone
Quartz Carbonate Vein

HOSTROCK COMMENTS: Mineralization is closely associated with Proterozoic diabase dyke. Gataga and Aida formations are part of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is located in the Gataga 19 claim, on a creek 9 kilometres north of the Gataga River, 9.5 kilometres west-southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2639, Map 1).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). Diabase or gabbroic dykes of Proterozoic age are common in the region.

The Gataga claim group is underlain by the Aida and Gataga formations of the Muskwa Assemblage (Geological Survey of Canada Memoir 373, Paper 67-68; Assessment Report 2639). The Aida Formation consists of interbedded dolomitic siltstone, argillaceous limestone, slate and argillite. The Gataga Formation comprises thinly-bedded slate and slaty mudstone and siltstone. The strata strike

CAPSULE GEOLOGY

north-northwest and dip gently to moderately west. Slaty cleavage dips westwards more steeply than bedding. Subhorizontal, unconformably overlying dolostone and quartzite of the Cambrian Atan Group lie at the southwestern extremity of the claim group.

A number of diabase dykes intrude the Proterozoic rocks. They dip steeply westwards and generally strike northwest, though some strike north or northeast. Some contact metamorphism is present. Faults and shear zones in the area have similar attitudes to the dykes, and many occur along dyke margins.

The Gataga 19 occurrence is centred on Showing No. 1 (Assessment Report 2639), also called the Gataga South zone (Geology, Exploration and Mining in British Columbia 1971). A small area of quartz-carbonate veining within or marginal to a diabase dyke is associated with a northwesterly-trending fault zone along a creek in the south of the claim group. The veins are parallel to the fault zone, dipping about 65 degrees southwest. They have a strike length of 60 metres and range in width from 15 to 60 centimetres. The veins contain chalcopyrite in discontinuous blebs or massive lenses up to 30 centimetres wide, concentrated in the centre, with malachite in the peripheral zones. Mineralization is moderate to low grade (Geology, Exploration and Mining in British Columbia 1971). Subsidiary shear fractures contain calcite and pyrite veinlets.

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- EMPR ASS RPT *2639, 10960
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/25

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 021**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 3

NAME(S): **GATAGA 9,11**, GATAGA NORTH ZONE, BE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 13 24 N
LONGITUDE: 125 20 44 W
ELEVATION: 1850 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6455973
EASTING: 362237

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Showing No. 2 on Gataga 9 and 11 claims, 11 kilometres north of Gataga River, 9 kilometres west-southwest of Churchill Peak in Muskwa Ranges (Assessment Report 2639, Map 1).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite was visually estimated at 2 to 5 per cent of the most mineralized section.

ASSOCIATED: Quartz Calcite Dolomite Pyrite

ALTERATION: Malachite Azurite Limonite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I06 Cu±Ag quartz veins

DIMENSION: 75 x 3 Metres STRIKE/DIP: 020/50E TREND/PLUNGE:

COMMENTS: Maximum length and width, and general orientation of mineralized veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Proterozoic
Middle Proterozoic
Proterozoic

GROUP

Undefined Group
Undefined Group

FORMATION

Aida
Gataga

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Dolomitic Siltstone
Argillaceous Limestone
Slate
Argillite
Slaty Mudstone
Slaty Siltstone
Diabase Dike
Quartz Calcite Dolomite Vein

HOSTROCK COMMENTS: Aida and Gataga formations are part of the Helikian Muskwa Assemblage, intruded by Proterozoic diabase dykes.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is located at the boundary between the Gataga 9 and 11 claims, 11 kilometres north of the Gataga River, 9 kilometres west-southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2639, Map 1).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). Diabase or gabbroic dykes of Proterozoic age are common in the region.

The Gataga claim group is underlain by the Aida and Gataga formations of the Muskwa Assemblage (Geological Survey of Canada

CAPSULE GEOLOGY

Memoir 373, Paper 67-68; Assessment Reports 2639, 10960). The Aida Formation consists of interbedded dolomitic siltstone, argillaceous limestone, slate and argillite. The Gataga Formation comprises thinly-bedded slate and slaty mudstone and siltstone. The strata strike north-northwest and dip gently to moderately west. Slaty cleavage dips westwards more steeply than bedding. Subhorizontal, unconformably overlying dolostone and quartzite of the Cambrian Atan Group lie at the southwestern extremity of the claim group.

A number of diabase dykes intrude the Proterozoic rocks. They dip steeply westwards and generally strike northwest, though some strike north or northeast. Some contact metamorphism is present. Faults and shear zones in the area have similar attitudes to the dykes, and many occur along dyke margins.

The Gataga 9,11 occurrence is centred on Showing No. 2 (Assessment Report 2639), also called the Gataga North zone (Geology, Exploration and Mining in British Columbia 1971). A series of short, discontinuous veins occur along the sheared margins of diabase dykes, and in fracture zones in the dolomitic slate country rock in their vicinity. The veins are oriented north to northeast and dip about 50 degrees east. They have a strike length of approximately 75 metres, and range from 0.3 to 3 metres in width. The veins consist of quartz, calcite and dolomite, and are moderately-well and irregularly mineralized with chalcopryrite and pyrite in masses up to 30 centimetres wide in the central portion of the veins. The sulphides are locally weathered to a limonitic gossan, accompanied by malachite and azurite. The grade of the strongest chalcopryrite was visually estimated at between 2 and 5 per cent copper (Assessment Report 2639).

One vein is sharply truncated by a dyke; this and other evidence at this showing indicates that the dykes are generally younger than the copper-bearing veins (Geology, Exploration and Mining in British Columbia 1971).

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- EMPR EXPL 1982-348
- EMPR ASS RPT *2639, 10960
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

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DATE REVISED: 1994/11/25

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 022**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 9

NAME(S): **CHOPPER 3, MO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 06 32 N
LONGITUDE: 125 12 36 W
ELEVATION: 1765 Metres

NORTHING: 6442966
EASTING: 369780

LOCATION ACCURACY: Within 500M

COMMENTS: Located on vein in Showing Number 4 in Chopper 3 claim, headwaters of Gataga River, 15 kilometres south of Churchill Mountain in the Muskwa Ranges (Assessment Report 2640, Geological Map).

COMMODITIES: Copper Lead Silver

MINERALS

SIGNIFICANT: Chalcopyrite Galena
COMMENTS: Galena is minor.
ASSOCIATED: Quartz Carbonate Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 50 x 1 Metres STRIKE/DIP: 350/75W TREND/PLUNGE:
COMMENTS: Approximate length and average thickness of vein. General orientation of fault and fracture zones hosting mineralized veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	
Middle Proterozoic	Undefined Group	Gataga	

LITHOLOGY: Slaty Dolomitic Mudstone
Slaty Dolomitic Siltstone
Argillaceous Limestone
Dolomite
Slaty Carbonaceous Shale
Mudstone
Siltstone
Sandstone
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida and overlying Gataga formations are part of Muskwa Assemblage. Mineralization is around contact but is structurally controlled.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY:	Assay/analysis	YEAR:	1970
SAMPLE TYPE:	Chip		
COMMODITY	GRADE		
Silver	3.4000	Grams per tonne	
Copper	1.5000	Per cent	
Lead	0.1000	Per cent	

COMMENTS: Chip sample C-1, taken over 60 centimetres, from Showing Number 4.
REFERENCE: Assessment Report 2640, Geological Map.

INVENTORY

ORE ZONE: ROCK

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1970

SAMPLE TYPE: Chip

COMMODITY

GRADE

Copper

1.2600

Per cent

COMMENTS: Chip sample C-2, taken over 60 centimetres, from Showing Number 4.

REFERENCE: Assessment Report 2640, Geological Map.

CAPSULE GEOLOGY

The Chopper 3 copper showing is situated at the headwaters of the Gataga River, 15 kilometres south of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2640).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage, a thick package of carbonate and clastic rocks which has been divided into a number of formations (Geological Society of America, Geology of North America, Volume G-2, page 111). All rocks are gently folded, and some have slaty cleavage. Northwest to northeast-striking, steeply dipping diabase and gabbro dykes are common in the region. The dykes are Proterozoic because they are truncated by a Lower Cambrian unconformity (Geological Survey of Canada Memoir 373).

The Chopper 3 occurrence is situated around the contact between the Aida Formation and the overlying Gataga Formation of the Muskwa Assemblage, although the mineralization is structurally, not stratigraphically, controlled. The Aida Formation comprises slaty, dolomitic mudstone and siltstone, argillaceous limestone, and dolostone (Assessment Report 2640; Geological Survey of Canada Memoir 373, Paper 67-68). The Gataga Formation consists of slaty, carbonaceous shale, mudstone, siltstone and sandstone. These rocks generally strike 330 degrees and dip moderately southwest. Numerous diabase dykes intrude this area, striking about 340 degrees and dipping steeply southwest. They range from a few metres to tens of metres in thickness. Centimetre-scale contact metamorphism next to the dykes is shown by epidote, actinolite, diopside and marble. Immediately southwest of the Chopper claim group are unconformably overlying siliceous sandstone and quartzite of the Lower Cambrian Atan Group.

Fault and shear fracture zones occur locally in the sedimentary rocks and less commonly along dyke margins. They strike north-northwest and dip moderately to steeply west. Many of these zones contain quartz-carbonate veins, ranging in thickness from 2.5 centimetres to 2.75 metres. A few of these veins are mineralized with chalcopyrite and minor galena, pyrite and malachite. This occurrence is centred on Showing Number 4, a vein in the Chopper 3 claim, hosted by highly shear-fractured shale and argillite. Mineralization is erratic and discontinuous here. Chip sample C-1 assayed 1.5 per cent copper, 0.1 per cent lead, and 3.4 grams per tonne silver, over 60 centimetres (Assessment Report 2640, Geological Map). Chip sample C-2 assayed 1.26 per cent copper over 60 centimetres (Assessment Report 2640, Geological Map).

BIBLIOGRAPHY

EMPR GEM 1970-47; 1971-103

EMPR EXPL 1982-348

EMPR ASS RPT *2640, 10960

GSC MEM 373

GSC P 67-68

GSC MAP 1343A; 1713A

GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/09

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 023**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 9

NAME(S): **CHOPPER 5, MO**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 06 53 N
LONGITUDE: 125 12 54 W
ELEVATION: 1900 Metres

NORTHING: 6443625
EASTING: 369506

LOCATION ACCURACY: Within 500M

COMMENTS: Located on vein in Showing Number 3 in Chopper 5 claim, headwaters of Gataga River, 14 kilometres south of Churchill Mountain in the Muskwa Ranges (Assessment Report 2640, Geological Map).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena
COMMENTS: Galena is minor.
ASSOCIATED: Quartz Carbonate Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 70 x 1 Metres STRIKE/DIP: 350/90 TREND/PLUNGE: /
COMMENTS: Approximate length and maximum thickness (30 centimetres) of vein.
Orientation of fault zone hosting mineralized vein.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic	Undefined Group	Gataga	

LITHOLOGY: Slaty Carbonaceous Shale
Mudstone
Siltstone
Sandstone
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Gataga Formation is part of Muskwa Assemblage. Mineralization is near base but is structurally, not stratigraphically, controlled.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY GRADE
Copper 11.2700 Per cent
COMMENTS: Chip sample C-8, taken over 30 centimetres, from Showing Number 3.
REFERENCE: Assessment Report 2640, Geological Map.

CAPSULE GEOLOGY

The Chopper 5 copper showing is situated at the headwaters of the Gataga River, 14 kilometres south of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2640).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa

CAPSULE GEOLOGY

Assemblage, a thick package of carbonate and clastic rocks which has been divided into a number of formations (Geological Society of America, *Geology of North America*, Volume G-2, page 111). All rocks are gently folded, and some have slaty cleavage. Northwest to northeast-striking, steeply dipping diabase and gabbro dykes are common in the region. The dykes are Proterozoic because they are truncated by a Lower Cambrian unconformity (Geological Survey of Canada Memoir 373).

The Chopper 5 occurrence is situated in the Gataga Formation, not far from the top of the underlying Aida Formation, both of the Muskwa Assemblage. The Gataga Formation consists of slaty, carbonaceous shale, mudstone, siltstone and sandstone (Assessment Report 2640; Geological Survey of Canada Memoir 373, Paper 67-68). The Aida Formation comprises slaty, dolomitic mudstone and siltstone, argillaceous limestone, and dolostone. These rocks generally strike 330 degrees and dip moderately southwest. Numerous diabase dykes intrude this area, striking about 340 degrees and dipping steeply southwest. They range from a few metres to tens of metres in thickness. Centimetre-scale contact metamorphism next to the dykes is shown by epidote, actinolite, diopside and marble. Immediately southwest of the Chopper claim group are unconformably overlying siliceous sandstone and quartzite of the Lower Cambrian Atan Group.

Fault and shear fracture zones occur locally in the sedimentary rocks and less commonly along dyke margins. They strike north-northwest and dip moderately to steeply west. Many of these zones contain quartz-carbonate veins, ranging in thickness from 2.5 centimetres to 2.75 metres. A few of these veins are mineralized with chalcopyrite and minor galena, pyrite and malachite. This occurrence is centred on Showing Number 3, a mineralized vein in the Chopper 5 claim (Assessment Report 2640). This vein ranges in width from 15 to 30 centimetres, and is exposed intermittently for about 70 metres along a small fault. It strikes about 350 degrees and dips vertically. Mineralization is erratic and discontinuous here. Chip sample C-8 assayed 11.27 per cent copper over 30 centimetres (Assessment Report 2640, Geological Map). A few other small, mineralized veins occur about 100 metres to the north.

BIBLIOGRAPHY

- EMPR GEM 1970-47; 1971-103
- EMPR EXPL 1982-348
- EMPR ASS RPT *2640, 10960
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): *Geology of North America*, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/09

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 024**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 9

NAME(S): **CHOPPER 7.9, MO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 07 14 N
LONGITUDE: 125 12 30 W
ELEVATION: 1900 Metres

NORTHING: 6444261
EASTING: 369920

LOCATION ACCURACY: Within 500M

COMMENTS: Located on vein in Showing Number 1 in Chopper 9 claim, headwaters of Gataga River, 13.5 kilometres south of Churchill Mountain in the Muskwa Ranges (Assessment Report 2640, Geological Map).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena
COMMENTS: Galena is minor.
ASSOCIATED: Quartz Carbonate Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
DIMENSION: 300 x 2 Metres STRIKE/DIP: 020/90 TREND/PLUNGE:
COMMENTS: For Showing Number 1: Maximum (discontinuous) length and average thickness of mineralized quartz-carbonate veins. General orientation of veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic	Undefined Group	Aida	
Middle Proterozoic	Undefined Group	Gataga	

LITHOLOGY: Slaty Dolomitic Mudstone
Slaty Dolomitic Siltstone
Argillaceous Limestone
Dolomite
Slaty Carbonaceous Shale
Mudstone
Siltstone
Sandstone
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Mineralization straddles contact between Aida and Gataga formations (Muskwa Assemblage), and also occurs along margin of Proterozoic dyke.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY _____ GRADE _____
Copper 7.3600 Per cent
COMMENTS: Chip sample C-3, taken over 60 centimetres, from Showing Number 1.
REFERENCE: Assessment Report 2640, Geological Map.

INVENTORY

ORE ZONE: ROCK

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1970

SAMPLE TYPE: Chip

COMMODITY

GRADE

Copper

1.4700

Per cent

COMMENTS: Chip sample C-7, taken over 60 centimetres, from Showing Number 2.

REFERENCE: Assessment Report 2640, Geological Map.

CAPSULE GEOLOGY

The Chopper 7,9 copper showing is situated at the headwaters of the Gataga River, 13.5 kilometres south of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2640).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage, a thick package of carbonate and clastic rocks which has been divided into a number of formations (Geological Society of America, Geology of North America, Volume G-2, page 111). All rocks are gently folded, and some have slaty cleavage. Northwest to northeast-striking, steeply dipping diabase and gabbro dykes are common in the region. The dykes are Proterozoic because they are truncated by a Lower Cambrian unconformity (Geological Survey of Canada Memoir 373).

The Chopper 7,9 occurrence is situated around the contact between the Aida Formation and the overlying Gataga Formation of the Muskwa Assemblage, although the mineralization is structurally, not stratigraphically, controlled. The Aida Formation comprises slaty, dolomitic mudstone and siltstone, argillaceous limestone, and dolostone (Assessment Reports 2640, 10960; Geological Survey of Canada Memoir 373, Paper 67-68). The Gataga Formation consists of slaty, carbonaceous shale, mudstone, siltstone and sandstone. These rocks generally strike 330 degrees and dip moderately southwest. Numerous diabase dykes intrude this area, striking about 340 degrees and dipping steeply southwest. They range from a few metres to tens of metres in thickness. Centimetre-scale contact metamorphism next to the dykes is shown by epidote, actinolite, diopside and marble. Immediately southwest of the Chopper claim group are unconformably overlying siliceous sandstone and quartzite of the Lower Cambrian Atan Group.

Fault and shear fracture zones occur locally in the sedimentary rocks and less commonly along dyke margins. Many of these zones contain quartz-carbonate veins, ranging in thickness from 2.5 centimetres to 2.75 metres. A few of these veins are mineralized with chalcopyrite and minor galena, pyrite and malachite. This occurrence is centred on Showing Number 1 in the Chopper 9 claim at the top of the Aida Formation, but it encompasses Showing Number 2, 250 metres to the southwest in the Chopper 7 claim, which is at the base of the Gataga Formation (Assessment Report 2640). The veins in Showing Number 1 strike about 020 degrees, dip steeply west or vertically, and extend discontinuously for about 300 metres, most it along the margin of a diabase dyke. The veins range in thickness from 0.6 to 2.75 metres. Mineralization is erratic, forming streaky lenses less than a centimetre to 25 centimetres wide. Chip sample C-3 assayed 7.36 per cent copper over 60 centimetres, and chip sample C-5 assayed 0.52 per cent copper over 2.75 metres (Assessment Report 2640, Geological Map).

Showing Number 2 consists of a single quartz-carbonate vein with a more typical north-northwest strike, and a dip of 40 degrees west. It is exposed for about 200 metres and ranges in width from 30 to 90 centimetres. Mineralization is very erratic. Chip sample C-7 assayed 1.47 per cent copper over 60 centimetres (Assessment Report

BIBLIOGRAPHY

- EMPR GEM 1970-47; 1971-103
- EMPR EXPL 1982-348
- EMPR ASS RPT *2640, 10960
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1357
REPORT: RGEN0100

BIBLIOGRAPHY

North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/10

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAGLE 1**, ROB, RORY,
CAT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 07 19 N
LONGITUDE: 125 07 47 W
ELEVATION: 1540 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6444267
EASTING: 374555

LOCATION ACCURACY: Within 500M

COMMENTS: Located in centre of Eagle claim group, from claim map, in headwaters of Gataga River, 14 kilometres south-southeast of Churchill Mountain in the Muskwa Ranges (Property File - Report on the Eagle property, 1972).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena

COMMENTS: Galena is minor.

ASSOCIATED: Quartz Carbonate

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: I06 Cu±Ag quartz veins

DIMENSION: 260 x 1 Metres STRIKE/DIP: 360/90

TREND/PLUNGE:

COMMENTS: Strike length and average thickness of main, Number 1 vein.
Approximate orientation of dyke and fault zone hosting mineralized vein.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	
Cambrian	Atan	Undefined Formation	

LITHOLOGY: Dolomitic Mudstone
Dolomitic Siltstone
Conglomerate
Sandstone
Shale
Limestone
Gabbroic Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Mineralization is situated in fault zones near thrust contact of these stratigraphic units, and along margins of gabbroic dykes.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1972

SAMPLE TYPE: Grab

COMMODITY

GRADE

Copper

11.2000

Per cent

COMMENTS: Best value among grab samples from Number 1 vein.

REFERENCE: Property File - Report on the Eagle property, 1972.

CAPSULE GEOLOGY

The Eagle 1 copper showing (not to be confused with the Eagle Mine 50 kilometres to the north-northwest) is situated on a tributary of the Gataga River in its headwaters, 14 kilometres south of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Property File - Report on the Eagle 1 property, 1972).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic

CAPSULE GEOLOGY

(Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage, a thick package of carbonate and clastic rocks which has been divided into a number of formations (Geological Society of America, Geology of North America, Volume G-2, page 111).

Available information on the geology of the Eagle 1 occurrence is limited. From its location, the property apparently straddles an east-northeast verging thrust contact which places dolomitic mudstone and siltstone of the Aida Formation of the Muskwa Assemblage onto conglomerate, sandstone, shale and limestone of the Cambrian Atan Group (Geological Survey of Canada Map 1343A, Memoir 373, Paper 67-68). The area is intruded by generally north-northwest trending, steeply-dipping gabbroic dykes.

The Eagle property, encompassing the Eagle, Rob, Rory and Cat claims, is located on two parallel, veined and mineralized fault zones, each about 1.6 kilometres long and about 1.5 kilometres apart. Each fault zone contains a system of quartz-carbonate veins, generally aligned along the contacts of northerly-trending gabbroic dykes intruding Proterozoic argillaceous rocks. The more important is the Number 1 vein system which is about 1.5 metres wide and has several branching quartz veins. Chalcopyrite and minor galena are erratically distributed in the main vein over a strike length of 260 metres, and to a lesser degree in the branching veins. Mineralization is strongest in the north of this vein system, from which grab samples have returned assays ranging from 0.45 to 11.2 per cent copper (Property File - Report on the Eagle 1 property, 1972). The other vein system has only minor, sub-economic copper mineralization.

BIBLIOGRAPHY

- EMPR PF (*Report on the Eagle property for Bearcat Explorations Limited, 1972).
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1994/11/10
DATE REVISED: / /

CODED BY: CJR
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 026**

NATIONAL MINERAL INVENTORY: 94K/6 Cu 5

NAME(S): **JOAN, JN, BE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 28 44 N
LONGITUDE: 125 16 15 W
ELEVATION: 1350 Metres

NORTHING: 6484266
EASTING: 367585

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized outcrops in JN 5 claim, within Joan claim group, 8 kilometres west-southwest of confluence of Delano Creek and Racing River, 6 kilometres northeast of Mount Roosevelt in Muskwa Ranges (Assessment Report 4639, Map 6; Property File - updated claim map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Small amounts.
ASSOCIATED: Quartz Ankerite Pyrite
ALTERATION: Malachite

COMMENTS: Main showing is strongly altered, but no details.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Vein Podiform
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Altered Argillite
Limy Dolomitic Slaty Argillite
Limy Dolomitic Slaty Siltstone
Dolomite
Limestone
Quartz Sandstone
Chloritic Schist
Diabase Dike
Quartz Ankerite Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

This minor copper showing is situated in the Joan claim group, 8 kilometres west-southwest of the junction of Delano Creek and Racing River, 6 kilometres northeast of Mount Roosevelt in the Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 4639, Map 6).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The Joan and JN group of claims is underlain by the Aida and Tuchodi formations of the Muskwa Assemblage, and by rocks of the Cambrian Atan Group (Assessment Reports 2641, 4639; Geological Survey of Canada Memoir 373). The mineralization appears to be confined to Aida Formation rocks, which in this area consist of limy and dolomitic slaty argillite and siltstone, sandstone, dolostone and limestone. Bedding strikes northwest and dips moderately southwest.

CAPSULE GEOLOGY

A few outcrops of diabase dykes are present on the property, striking between north and east.

Small amounts of copper mineralization have been found. The occurrence is centred on the best showing, on the JN 5 claim (Assessment Report 4639, Map 6; Property File - updated claim map). Here, quartz-ankerite breccia veins, in strongly altered argillite associated with a diabase dyke, are mineralized with blebs of chalcopyrite, minor pyrite and malachite. Roughly 1 kilometre to the west, in the Joan 2 and 19 claims, there are two other, small occurrences of chalcopyrite, malachite and pyrite in quartz sandstone and chloritic schist (Assessment Report 4639, Map 6).

BIBLIOGRAPHY

- EMPR GEM 1970-45; 1973-478
EMPR ASS RPT 2641, *4639, 10504, 15090
EMPR PF (Joan claim group - Updated claim map, dated July 1973)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
*Vail, J.R. (1957): Geology of the Racing River area, British Columbia; unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/23

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 027**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 5

NAME(S): **BRONSON**, BRON, BE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094K03W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 11 06 N
LONGITUDE: 125 18 22 W
ELEVATION: 2340 Metres

NORTHING: 6451626
EASTING: 364408

LOCATION ACCURACY: Within 500M

COMMENTS: Located on 'Central' zone in Bronson 19 claim, on ridge 7 kilometres north of Gataga River, 14 kilometres southwest of Churchill Peak in the Muskwa Ranges (Assessment Report 2487, Map 3).

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz Carbonate Specularite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Bladed
DIMENSION: 1100 x 50 Metres STRIKE/DIP: 060/90
COMMENTS: General, approximate orientation, and overall length and maximum width of belt of mineralization.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Gataga	
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Quartz Sericite Phyllite
Slate
Limy Argillite
Siltstone
Diabase Dike
Dolomitic Mudstone
Dolomitic Siltstone
Argillaceous Limestone
Quartz Carbonate Vein

HOSTROCK COMMENTS: Gataga and Aida formations form part of Helikian Muskwa Assemblage. Mineralization also closely associated with Proterozoic diabase dykes.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: CENTRAL REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 4.8000 Grams per tonne
Copper 17.6900 Per cent
COMMENTS: Chip sample 418, over 1.5 metres, from the Bronson 'Central' zone.
REFERENCE: Assessment Report 2487.

ORE ZONE: SOUTH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY GRADE
Silver 116.0000 Grams per tonne
Copper 29.2200 Per cent
COMMENTS: Chip sample 403, over 0.45 metre, from the Bronson 'South' zone.
REFERENCE: Assessment Report 2487.

CAPSULE GEOLOGY

This copper prospect in the Bronson claim group is situated 7 kilometres north of the Gataga River, 14 kilometres southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2487, Map 3).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111).

Northeast to (more commonly) north-northwest trending, steeply-dipping diabase or gabbroic dykes are common in the region. These Proterozoic intrusions were structurally-controlled as their presence and orientation are closely related to regionally important fault and fracture zones in the Proterozoic sedimentary rocks.

The Bronson claim group is underlain mainly by the Aida and Gataga formations of the Muskwa Assemblage. The Aida Formation comprises mainly dolomitic mudstone and siltstone, and argillaceous limestone. The overlying Gataga Formation, outcropping to the west, consists of slaty mudstone and siltstone (Geological Survey of Canada Memoir 373, Paper 67-68; Assessment Reports 2487, 10960). In the extreme west are shale, argillite and limestone of the Cambrian Atan Group (Assessment Report 2487).

The Bronson prospect lies on an east-trending ridge composed of slate and limy argillite, probably of the Gataga Formation. These rocks strike north-northwest and dip 35 to 60 degrees west. Several large diabase dykes, 15 to 150 metres thick, outcrop on the ridge. They strike northeast to northwest and dip steeply westward. Cross-cutting dykes are common. The sedimentary rocks hosting the mineralization are intensely and complexly fractured. The main fractures and the most important quartz-carbonate veins within them strike 060 degrees and dip vertically to steeply northwest, some of them cutting across the dykes as well.

There are two particular areas of such veining: one is on the steep, north-facing side of the ridge, and the other is a few hundred metres to the south, on the southeast-facing slope (Assessment Report 2487; Geology, Exploration and Mining in British Columbia 1971). The northern or 'Central' zone, in Bronson 19 and 6 claims and on which the occurrence is centred, consists of several parallel veins in a zone up to 50 metres wide and traceable for over 600 metres east-northeastwards (the eastern end is known as the 'East' zone) and for about 360 metres down the cliff face. Much of this zone consists of quartz-sericite phyllite hosting numerous quartz veinlets. The veins and veinlets are rich in chalcopyrite, though mineralization is irregular. The better results are found at the western end. One 1.5-metre chip sample (sample 418) assayed 17.69 per cent copper and 4.8 grams per tonne silver (Assessment Report 2487). Most of the other chip samples from this cluster of veins assayed over 6 per cent copper. Some of the veins were grouped to produce a weighted average grade of 2.7 per cent copper over a total width of 33.5 metres (Assessment Report 2487, page 14).

The other zone or 'South' zone, in Bronson 21 claim, contains 3 veins from 0.3 to 1.2 metres in width, heavily mineralized with bornite and chalcopyrite, in a zone 36 metres wide. The longest vein has been traced for 180 metres, along the sheared margins of a branching dyke trending 020 degrees. Copper values are generally higher than the Central zone but apparently over narrower widths. Chip sample 403 assayed 29.22 per cent copper and 116 grams per tonne silver over 0.45 metre (Assessment Report 2487). Another sample (402) assayed 5.8 grams per tonne gold (Assessment Report 2487). A younger variety of mineralization is represented by vuggy quartz veinlets with chalcopyrite and specular hematite.

There is also a 'West' zone, an isolated area 450 metres west of the Central zone. Quartz-carbonate veins are mineralized with chalcopyrite and bornite, and yield assays that average 7.88 per cent copper over 1.7 metres. Linked with the Central and East zones, this belt of intermittent, fracture-controlled mineralization has an overall length of at least 1.1 kilometres (Geology, Exploration and Mining in British Columbia 1971).

Underground and surface diamond drilling in 1970 and 1971, respectively, indicated that the mineralization does not extend for a significant depth (Geology, Exploration and Mining in British Columbia 1971).

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1364
REPORT: RGEN0100

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GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).
N MINER June 11, 1970-7

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/18

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **RED**, ROCK, CHODI

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K04E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 10 48 N
LONGITUDE: 125 31 16 W
ELEVATION: 1160 Metres

NORTHING: 6451523
EASTING: 351749

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Red showing in Chodi 6 claim, 9 kilometres east of confluence of Gataga and South Gataga rivers, in Muskwa Ranges (Assessment Report 9540, Plate 8).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
COMMENTS: Sphalerite is yellow or pale red-brown, indicating high zinc/iron ratio.

ASSOCIATED: Pyrite
COMMENTS: Pyrite is dominant sulphide.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive Podiform Stockwork
CLASSIFICATION: Hydrothermal Replacement
SHAPE: Tabular
DIMENSION: 10 Metres STRIKE/DIP: 320/35W TREND/PLUNGE:
COMMENTS: Thickness of mineralized strata and its general attitude.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	
Cambrian	Atan	Undefined Formation	

LITHOLOGY: Dolomite
Dolomitic Breccia
Quartz Sandstone
Shale
Slaty Argillite
Limestone

HOSTROCK COMMENTS: Age of host rocks uncertain. Could be Aida Formation of the Helikian Muskwa Assemblage, or Cambrian Atan Group.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated on western edge of northwest-trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

The Red zinc showing is situated in the Chodi 6 claim, 9 kilometres east of the confluence of the Gataga and South Gataga rivers, in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 9540, Plate 8). The subordinate Rock showing is a few hundred metres to the southeast.

The occurrence is on the western edge of the Muskwa Anticlinorium, a major regional structure characterized by thrust faulting and moderate folding. Exposed in the structure are Middle Proterozoic clastic and carbonate rocks of the Helikian Muskwa Assemblage, and unconformably overlying Cambrian and younger Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1343A).

Regional geological mapping would place the Red showing within the Gataga Formation of the Muskwa Assemblage, which is dominated by carbonaceous mudstone and siltstone (Geological Survey of Canada Map 1343A, Memoir 373). Property mapping, however, indicates that this and the nearby Gut (094K 016) and Goat (094K 056) MINFILE showings occur near the contact between a Cambrian dolostone unit and an overlying unit of quartz sandstone, shale and argillite, and limestone (probably all Atan Group) (Assessment Report 9540). Given the regional setting, though, this succession is perhaps more

CAPSULE GEOLOGY

compatible with the contact between the Gataga Formation and dolomitic rocks of the underlying Aida Formation; this suggestion is tentative. Stromatolites and cryptalgal laminae are reported from the dolostone. The strata are gently to moderately folded, and strike about 320 degrees and dip 35 degrees southwest. Argillaceous rocks are well cleaved.

Mineralization is generally confined to the uppermost 10 metres of the dolostone and dolomitic breccia unit. It consists of pyrite and sphalerite. Fine-grained pyrite occurs in massive lenses up to 20 centimetres thick, and in vertical stockwork zones. Sphalerite, usually yellow or pale red-brown (indicating a high zinc/iron ratio), is much less abundant and occurs in dolostone as coarse-grained massive pods and lenses up to 2 centimetres across. Highly anomalous soils are present in the area, including values of up to 6 per cent zinc (Assessment Report 9540).

From the textures and the association of the sulphides with recrystallization in the dolostone, it has been proposed that the mineralization is a carbonate-hosted, replacement-type massive sulphide deposit (Assessment Report 9540).

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- GSC MAP 1343A; 1713A
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DATE CODED: 1994/11/29
DATE REVISED: 1994/11/30

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 029**

NATIONAL MINERAL INVENTORY:

NAME(S): **HO**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 20 18 N
LONGITUDE: 125 10 37 W
ELEVATION: 1370 Metres

NORTHING: 6468440
EASTING: 372552

LOCATION ACCURACY: Within 500M

COMMENTS: Located on the Ho 19, 21 claims, 1 kilometre west of Churchill Creek, 8 kilometres north-northeast of Tehran Peak in Muskwa Ranges (Geology, Exploration and Mining in British Columbia 1970).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive Podiform
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
COMMENTS: No structural details available.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Proterozoic
Middle Proterozoic

GROUP

Undefined Group
Undefined Group

FORMATION

Tuchodi
Aida

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Sandstone
Dolomite
Dolomitic Siltstone
Quartz Carbonate Vein

HOSTROCK COMMENTS: Tuchodi and Aida formations form part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Ho copper showing is located in the Ho 19 and 21 claims, 1 kilometre west of Churchill Creek, 8 kilometres north-northeast of Tehran Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia 1970; Mineral claim map, December 1970).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A).

According to its location, the area around the claims is underlain mainly by the Tuchodi Formation, consisting of sandstone, dolostone, dolomitic siltstone, and shale (Geological Survey of Canada Memoir 373). Towards the west are similar rocks of the overlying Aida Formation, also of the Muskwa Assemblage.

The rocks are cut by quartz-carbonate veins which contain disseminations, stringers and massive pods of chalcopyrite (Geology, Exploration and Mining in British Columbia 1970). No other details of the mineralization are available. A road to the site was constructed, possibly in 1970, which is shown on the federal topographic map (Normandy Mountain, 94K/6).

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GSC MEM 373

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1368
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 67-68
GSC MAP 1343A; 1713A
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North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/16

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 030**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 6

NAME(S): **428 CENTRAL**, 428, BE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094K03W 094K03E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 12 04 N
LONGITUDE: 125 15 33 W
ELEVATION: 1900 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6453326
EASTING: 367227

LOCATION ACCURACY: Within 500M

COMMENTS: Located on vein sample 4-6 near common corner of 428 3 to 6 claims, 8 kilometres north of Gataga River, 6 kilometres southwest of Churchill Peak in Muskwa Ranges (Assessment Report 2644, Geology Map).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena
COMMENTS: Galena is very minor.
ASSOCIATED: Quartz Ankerite Pyrite
ALTERATION: Malachite Azurite Limonite
ALTERATION TYPE: Silicific'n Sericitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Bladed
MODIFIER: Faulted
DIMENSION: 750 x 60 Metres STRIKE/DIP: 330/70W TREND/PLUNGE:
COMMENTS: Approximate orientation and maximum length and width of fault zone hosting mineralized vein system.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Slaty Argillite
Argillaceous Limestone
Dolomite
Diabase Dike
Quartz Ankerite Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY GRADE
Copper 2.5600 Per cent
COMMENTS: From highly mineralized section (sample 4-6), taken over 9 metres.
REFERENCE: Assessment Report 2644, Geology Map.

ORE ZONE: ROCK REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1971
SAMPLE TYPE: Chip
COMMODITY GRADE
Copper 0.5000 Per cent
COMMENTS: High end of range of more representative chip sample values; taken over 6.4 metres.
REFERENCE: Assessment Report 3318, Map 3.

CAPSULE GEOLOGY

The 428 Central Zone copper prospect is centred near the common corner of claims 3 to 6 in the 428 claim group, 8 kilometres north of

CAPSULE GEOLOGY

the Gataga River, 6 kilometres southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Reports 2644, Geology Map; 3318, Map 3).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by southwest-dipping thrust faults and moderate folding. This region is dominated by Middle Proterozoic (Helikian) clastic and carbonate rocks, unconformably overlain by Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). Northeast to (more commonly) north-northwest trending, steeply-dipping diabase or gabbroic dykes are common in the region. These Proterozoic intrusions were structurally-controlled as their presence and orientation are closely related to regionally important fault and fracture zones in the Proterozoic sedimentary rocks.

The 428 claim group is underlain mainly by the Aida Formation of the Muskwa Assemblage, comprising slaty argillite, argillaceous limestone and dolostone (Geological Survey of Canada Memoir 373, Paper 67-68; Assessment Reports 2644, 3318). The strata strike northwest and dip gently to moderately southwest. They are intruded by diabase dykes which strike north or north-northwest and dip steeply west. The dykes, some of them branching, are up to 20 metres thick. There is commonly a narrow zone of chloritic and epidotitic alteration around them. In the extreme east of the property, a thrust places all these rocks on a panel of Lower Paleozoic rocks.

A major fault zone passes through the centre of the claim group, striking north to northwest and dipping west about 70 degrees. It can be traced for over 3 kilometres, and is generally 15 to 60 metres wide. The zone is important as it contains numerous mineralized quartz-carbonate veins and vein systems (Assessment Reports 2644, 3318, 10960). The veins strike around north and dip steeply to vertically. Many veins follow the margins of dykes in the fault zone, which may be sheared; others may be concordant with the prominent slaty cleavage in the sedimentary country rocks. Individual veins range in width from 1 centimetre to 3 metres, with an average of 1 metre, and some occur in swarms between 3 and 20 metres wide. The larger veins are more persistent, reaching over 200 metres in length, whereas smaller veins are discontinuous and lenticular. Some veins are slightly disrupted or offset by younger faults.

The mineralization in this belt is intermittent but can be assigned to three main areas (Geology, Exploration and Mining in British Columbia 1971). The 428 Central occurrence is typical, and is in the approximate centre of the belt (the other areas to the north and south are covered by the 428 North (094K 015) and 428 South (094K 055) MINFILE occurrences, respectively). The vein system here is discontinuously exposed for about 750 metres. The quartz-carbonate (ankerite) veins are mineralized with irregular masses, lenses or disseminations of chalcopyrite; minor amounts of galena and disseminated pyrite occur sporadically in some veins. The strongest mineralization appears to be associated with the most abundant inclusions of wall-rock, which is generally altered (silicified and sericitized) (Assessment Report 3318). Secondary malachite, azurite and limonite occur on some surfaces in the veins and sedimentary host rocks.

Assay values of chip samples range from 0.16 to 0.5 per cent copper over 1 metre and 6.4 metres, respectively (Assessment Report 3318, Map 3). Much higher values have been obtained from highly mineralized sections, such as 2.56 per cent copper over 9 metres (Assessment Report 2644, Geology Map).

The fault zone hosting the 428 mineral occurrences is probably the same as that hosting the Book 6 (094K 019) and Book 9-10 or PJ Pelletier (094K 052) MINFILE occurrences several kilometres to the south (Geology, Exploration and Mining in British Columbia 1971).

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- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1371
REPORT: RGEN0100

BIBLIOGRAPHY

North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/22

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 031**

NATIONAL MINERAL INVENTORY:

NAME(S): **PUCK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 06 23 N
LONGITUDE: 125 55 45 W
ELEVATION: 1580 Metres

NORTHING: 6444302
EASTING: 327406

LOCATION ACCURACY: Within 500M

COMMENTS: Located on sample 922-112-79, western edge of Puck 1 claim, upper Driftpile Creek, 17 kilometres west-southwest of confluence of Gataga and South Gataga rivers in Muskwa Ranges (Assessment Report 7464, Figures 7a, 8c).

COMMODITIES: Barite Lead

MINERALS

SIGNIFICANT: Barite
COMMENTS: No visible mineralization. Lead commodity based on rock assay.
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Podiform
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: 1100 x 400 Metres STRIKE/DIP: 330/65W TREND/PLUNGE:
COMMENTS: General orientation, and length and width of zone of baritic strata, although constituent barite lenses are on the metre-scale.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Earn	Gunsteel	

LITHOLOGY: Baritic Siliceous Pyritic Mudstone
Baritic Siliceous Pyritic Shale
Shale

HOSTROCK COMMENTS: Gunsteel Formation (informal name) and Earn Group form part of the Kechika Trough.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the Kechika Trough.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1979
SAMPLE TYPE: Chip
COMMODITY GRADE
Lead 0.1200 Per cent

COMMENTS: Rock chip sample 922-112-79; no visible mineralization.
REFERENCE: Assessment Report 7464, page 20, figures 7a, 8c.

CAPSULE GEOLOGY

This minor lead showing is located on sample 922-112-79 on the western edge of the Puck 1 claim, in upper Driftpile Creek, 17 kilometres west-southwest of the confluence of the Gataga and South Gataga rivers in the Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 7464, Figures 7a, 8c).

The occurrence is in the Gataga mineral district, in a belt of Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Exploration and Mining Geology, Volume 1, page 1; Geological Survey of Canada Map 1713A). The Gataga mineral deposits are characterized by stratiform sedimentary-exhalative barite-sulphide mineralization, which occurs at certain Ordovician, Silurian and Devonian stratigraphic horizons. The last are the most economically significant and are represented in the area by the important Driftpile Creek developed prospect (094K

CAPSULE GEOLOGY

066), 5 kilometres south of the Puck occurrence. Structurally, the region is deformed into a series of a northwest-trending folds and imbricate thrust faults.

Like the Driftpile Creek deposit, the Puck claims are underlain mainly by the Middle to Upper Devonian Gunsteel Formation (informal name) of the Devono-Mississippian Earn Group (Geological Survey of Canada Memoir 373, Paper 88-1E, page 1; Insley, M.W. (1990) - thesis). This unit here consists of silver-grey weathering shale, mudstone and cherty argillite (Assessment Report 7290, 7464). The most important lithofacies in the unit is a baritic, siliceous mudstone and shale, which occurs in lenses 1 to 5 metres long and 2 to 30 centimetres thick. Locally it is calcareous and pyritic. This lithology outcrops in a zone approximately 1100 metres long, 400 metres wide, and which generally dips 65 degrees southwest. All rocks are complicated by tight folding. The Ordovician to Lower Devonian Road River Group also outcrops in the area.

This baritic facies of the Gunsteel Formation is favourable for hosting stratiform lead-zinc mineralization in the district, as it does at the Driftpile Creek deposit. However, no visible mineralization was found on the Puck claim, although the rock chip sample referred to was assayed at 0.12 per cent lead, raising the possibility of unexposed mineralization.

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- *Insley, M.W. (1990): Sedimentology and Geochemistry of the Driftpile Ba-Fe-Zn-Pb mineralization, Northeastern British Columbia, Canada; unpublished Ph.D. thesis, University of London.
- Chevron File
- EMPR OF 2000-22

DATE CODED: 1994/12/05
DATE REVISED: / /

CODED BY: CJR
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 032**

NATIONAL MINERAL INVENTORY:

NAME(S): **FROG**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K12E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 44 02 N
LONGITUDE: 125 38 40 W
ELEVATION: 1780 Metres

NORTHING: 6513441
EASTING: 346925

LOCATION ACCURACY: Within 500M

COMMENTS: Approximately located on mineralized outcrop, 7 kilometres northeast of confluence of Toad River and Yedhe Creek in the Muskwa Ranges, Northern Rocky Mountains, 6 kilometres south of the Alaska Highway (Vail, J.R. (1957) - Thesis, Geological Map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Chalcocite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Discordant
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: Metres STRIKE/DIP: 360/90 TREND/PLUNGE:
COMMENTS: General attitude of mineralized, fracture-filling veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Tuchodi	

LITHOLOGY: Feldspathic Quartzite
Silty Dolomite
Argillaceous Dolomite
Dolomite
Siltstone
Shale
Basic Dike
Gabbroic Dike

HOSTROCK COMMENTS: Tuchodi Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several similar occurrences in the Muskwa Anticlinorium.

CAPSULE GEOLOGY

The Frog is a minor showing of copper mineralization, 7 kilometres northeast of the confluence of Toad River and Yedhe Creek in the mountainous Muskwa Ranges of the Northern Rocky Mountains, 6 kilometres south of the Alaska Highway (Vail, J.R. (1957) - Thesis).

The occurrence is at the northern end of the Muskwa Anticlinorium, a major structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). This assemblage of carbonate and clastic rocks has been divided into seven formations. The Frog showing is in the Tuchodi Formation, a 1500-metres thick succession of feldspathic, cross-bedded quartzite, with varying amounts of silty and argillaceous dolostone, siltstone and shale (Geological Survey of Canada Memoir 373, Paper 67-68).

Although no details are available, the Frog is typical of several minor copper showings in this anticlinorium, all of which occur in quartz-carbonate veins (Vail, J.R. (1957) - Thesis). The veins fill fractures, generally spaced a few metres or tens of metres

CAPSULE GEOLOGY

apart. Individual veins are about 50 centimetres wide, and most cannot be traced very far. In many cases, the quartz-carbonate veins lie along the contacts of basic dykes (gabbroic dykes on Geological Survey of Canada Map 1343A) or near them, and here the zone of fracturing may be about 6 metres wide. Such fracture zones associated with dykes can locally be traced intermittently for about 350 metres.

Copper mineralization in the veins is sporadic and comprises chalcopyrite and, where weathered and oxidized, malachite. Only very minor, secondary chalcocite and limonite are present.

The mineralization is clearly structurally controlled given its association with the fracture-filling veins, which consistently strike north-northeast to north-northwest, and dip subvertically. Many of the copper-bearing veins in the region occur within a few kilometres west of the front of large northeast-verging thrusts, near the base of the hanging wall, and they may be related to subsidiary fracturing. This would imply that the mineralization is late Mesozoic to Tertiary, the age of the thrusting (Vail, J.R. (1957) - Thesis). Alternatively and more likely, the veining and mineralization was contemporaneous with the basic dyke intrusion, which is demonstrably Precambrian (Geology, Exploration and Mining in British Columbia 1971).

BIBLIOGRAPHY

- EMPR GEM 1971-75
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
- *Vail, J.R. (1957): Geology of the Racing River area, British Columbia; Unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/02

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 033**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAVIO**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K02W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 14 03 N
LONGITUDE: 124 47 04 W
ELEVATION: 2100 Metres

NORTHING: 6456169
EASTING: 395220

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located on mineralized outcrop in headwaters of Racing River, 5 kilometres northwest of Mount Aida in Muskwa Ranges, Northern Rocky Mountains (Vail, J.R. (1957) - Thesis, Geological Map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Chalcocite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Discordant
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: Metres STRIKE/DIP: 360/90 TREND/PLUNGE:
COMMENTS: General attitude of mineralized, fracture-filling veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Dolomitic Mudstone
Dolomitic Siltstone
Dolomite
Mudstone
Sandstone
Limestone
Basic Dike
Gabbroic Dike

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several occurrences in the Muskwa Anticlinorium.

CAPSULE GEOLOGY

The Savio is a minor showing of copper mineralization in the headwaters of Racing River, 5 kilometres northwest of Mount Aida in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Vail, J.R. (1957) - Thesis, Geological Map).

The occurrence is in a region known as the Muskwa Anticlinorium, a major structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). This assemblage of carbonate and clastic rocks has been divided into seven formations. The Savio showing is in the Aida Formation, a 1200 to 1800-metres thick succession of dolomitic mudstone and siltstone, dolostone, and minor mudstone, sandstone and limestone (Geological Survey of Canada Memoir 373, Paper 67-68).

Although no details are available, the Savio is typical of several minor copper showings in this anticlinorium, all of which occur in quartz-carbonate veins. The veins fill fractures, generally spaced a few metres or tens of metres apart. Individual veins are about 50 centimetres wide, and most cannot be traced very far. In many cases, the quartz-carbonate veins lie along the contacts of

CAPSULE GEOLOGY

basic dykes (gabbroic dykes on Geological Survey of Canada Map 1343A) or near them, and here the zone of fracturing may be about 6 metres wide. Such fracture zones associated with dykes can locally be traced intermittently for about 350 metres.

Copper mineralization in the veins is sporadic and comprises chalcopyrite and, where weathered and oxidized, malachite. Only very minor, secondary chalcocite and limonite are present.

The mineralization is clearly structurally controlled given its association with the fracture-filling veins, which consistently strike north-northeast to north-northwest, and dip subvertically. Many of the copper-bearing veins in the region occur within a few kilometres west of the front of large northeast-verging thrusts (the Petersen thrust in this case), near the base of its hanging wall, and they may be related to subsidiary fracturing. This would imply that the mineralization is late Mesozoic to Tertiary, the age of the thrusting (Vail, J.R. (1957) - thesis). Alternatively and more likely, the veining and mineralization was contemporaneous with the basic dyke intrusion, which is demonstrably Precambrian (Geology, Exploration and Mining in British Columbia 1971).

BIBLIOGRAPHY

- EMPR GEM 1971-75
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
*Vail, J.R. (1957): Geology of the Racing River area, British Columbia; Unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/03

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 034**

NATIONAL MINERAL INVENTORY: 94K/7 Cu 1

NAME(S): **CALLISON**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K07E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 20 06 N
LONGITUDE: 124 33 43 W
ELEVATION: 1585 Metres

NORTHING: 6467069
EASTING: 408544

LOCATION ACCURACY: Within 500M

COMMENTS: Located on main showing in headwaters of Chischa River, 13 kilometres northeast of Mount Stalin in the Muskwa Ranges (Vail, J.R. (1957) - Thesis, Geological Map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Calcite Ankerite
ALTERATION: Malachite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 900 x 45 Metres STRIKE/DIP: 320/90 TREND/PLUNGE: /
COMMENTS: Probable length and width and orientation of fault zone containing mineralized veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	George	
Middle Proterozoic	Undefined Group	Henry Creek	

LITHOLOGY: Shaly Limestone
Calcareous Shale
Argillite
Quartz Calcite Ankerite Vein

HOSTROCK COMMENTS: Mineralization hosted in either or both of these formations, which belong to the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the core of the Tuchodi Anticline.

CAPSULE GEOLOGY

The Callison is a showing of copper mineralization in the headwaters of Chischa River, 13 kilometres northeast of Mount Stalin in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Vail, J.R. (1957) - Thesis, Geological Map).

The occurrence is in a region known as the Tuchodi Anticline, an open fold structure which formed on a ramp of a major northeast-verging thrust (Geological Society of America, Geology of North America, Volume G-2, pages 639, 642). Exposed in the anticline are rocks as old as Middle Proterozoic (Helikian), and these are flanked by Paleozoic rocks (Geological Survey of Canada Map 1343A). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). This assemblage of carbonate and clastic rocks has been divided into seven formations. From its location and limited descriptions, the Callison showing is probably in either the George or overlying Henry Creek Formation, or possibly both (Vail, J.R. (1957) - Thesis). The George Formation consists of fine-grained limestone and dolostone, and the Henry Creek Formation is mainly calcareous mudstone, with minor sandstone and limestone (Geological Survey of Canada Memoir 373, Paper 67-68).

The main Callison showing is in the Chischa River canyon (Vail, J.R. (1957) - Thesis). Mineralization is hosted in

CAPSULE GEOLOGY

quartz-calcite-ankerite veins associated with faults, in shaly limestone, calcareous shale and argillite. The faults and veins are vertical, strike 320 degrees, and are concentrated in a 45-metres wide zone marked by shearing. The amount and sense of displacement are not known. Massive chalcopryrite occurs in zones up to 60 centimetres wide. Some limonite and malachite are present.

The fault zone and mineralization reappear above the talus on the slopes about 900 metres to the south of the main showing, where it is 15 to 30 metres wide and consists of quartz-calcite veins with some chalcopryrite. The fault zone can be traced even farther southeast, indicating an overall length of about 3 kilometres.

A reference has been made to disseminated chalcopryrite in a thick-bedded quartzite in the Tuchodi Formation (a younger unit of the Muskwa Assemblage) in this general area, that is, the headwaters of the Chischa River, 10 kilometres north of the Tuchodi Lakes (Geology, Exploration and Mining in British Columbia 1971). It is not clear if this has any relation to the Callison showing, the nearest MINFILE occurrence.

BIBLIOGRAPHY

- EMPR GEM 1971-76
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
*Vail, J.R. (1957): Geology of the Racing River area, British Columbia; Unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/03

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 035**

NATIONAL MINERAL INVENTORY: 94K/7 Cu 2

NAME(S): **STRANGWARD B, MARV**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K07E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 28 45 N
LONGITUDE: 124 38 59 W
ELEVATION: 1920 Metres

NORTHING: 6483240
EASTING: 403798

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized dykes, 7.5 kilometres west-northwest of Mount Mary Henry in the Muskwa Ranges, 20 kilometres south of Summit Lake on the Alaska Highway (Vail, J.R. (1957) - Thesis, Geological Map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ALTERATION: Pyrite Chalcocite Covellite
COMMENTS: Oxidation alteration type refers to supergene enrichment, involving alteration of primary chalcopyrite and bornite.

ALTERATION TYPE: Oxidation Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Discordant
CLASSIFICATION: Hydrothermal Igneous-contact
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
DIMENSION: Metres STRIKE/DIP: 335/90 TREND/PLUNGE:
COMMENTS: Orientation of basic dykes hosting mineralization.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Chischa	
Middle Proterozoic	Undefined Group	Tetsa	
Proterozoic			Unnamed/Unknown Informal

LITHOLOGY: Basic Dike
Gabbroic Dike
Dolomite
Quartzite
Mudstone
Sandstone

HOSTROCK COMMENTS: Chischa and Tetsa formations form part of the Helikian Muskwa Assemblage, intruded by basic dykes.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in core of the Tuchodi Anticline.

CAPSULE GEOLOGY

The Strangward B is a showing of copper mineralization, 7.5 kilometres west-northwest of Mount Mary Henry in the mountainous Muskwa Ranges of the Northern Rocky Mountains, 20 kilometres south of the settlement of Summit Lake on the Alaska Highway (Vail, J.R. (1957) - Thesis, Geological Map).

The occurrence is in a region known as the Tuchodi Anticline, an open fold structure which formed on a ramp of a major northeast-verging thrust (Geological Society of America, Geology of North America, Volume G-2, pages 639, 642). Exposed in the anticline are rocks as old as Middle Proterozoic (Helikian), and these are flanked by Paleozoic rocks (Geological Survey of Canada Map 1343A). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). This assemblage of carbonate and clastic rocks has been divided into seven formations. From its location, the Strangward B showing is probably in either the Chischa or overlying Tetsa Formation, or possibly both (Vail, J.R. (1957) - Thesis; Geological Survey of Canada Memoir 373, Paper 67-68). The Chischa Formation is composed of dolostone and quartzite, and the Tetsa Formation consists of

CAPSULE GEOLOGY

mudstone and sandstone.

The Strangward B showing is actually closely associated with a basic dyke, specifically the west contact of the eastern of two parallel dykes spaced 60 metres apart (Vail, J.R. (1957) - Thesis). Pockets of chalcopyrite and chalcocite occur sporadically along this dyke contact. Both dykes strike 335 degrees and are vertical. They have been traced for at least 6.5 kilometres to the northwest. At their southeastern extremity they branch into several smaller dykes. Regionally, these basic or gabbroic dykes are known to be Precambrian because they are truncated by a sub-Cambrian unconformity (Geological Survey of Canada Memoir 373).

Over a 2.5-kilometres long segment of the dykes there are a number of gossans attributed to the weathering of pyritic replacement. Associated with this was a supergene enrichment which altered primary chalcopyrite and bornite to chalcocite and covellite (Vail, J.R. (1957) - Thesis).

BIBLIOGRAPHY

- EMPR PF (Sevensma, P.H. (1969): Prospectus map; see also Property File under 094K 009)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
Menzies, M.M. (1951): Geology and Mineralogy of the Strangward Copper Property, South Tetsa River, British Columbia; unpublished M.Sc. thesis, University of British Columbia.
*Vail, J.R. (1957): Geology of the Racing River area, British Columbia; Unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

open fold structure which formed on a ramp of a major northeast-verging thrust (Geological Society of America, Geology of North America, Volume G-2, pages 639, 642). Exposed in the anticline are rocks as old as Middle Proterozoic (Helikian), and these are flanked by Paleozoic rocks (Geological Survey of Canada Map 1343A). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). This assemblage of carbonate and clastic rocks has been divided into seven formations. From its location, the Strangward A showing is apparently close to the contact between the Chischa and the overlying Tetsa Formation (Vail, J.R. (1957) - Thesis; Geological Survey of Canada Memoir 373, Paper 67-68). The Chischa Formation is composed of dolostone and quartzite, and the Tetsa Formation consists of mudstone and sandstone. Locally, the original Strangward claims are underlain by siliceous limestone, feldspathic quartzite and carbonaceous sandstone (Menzies, M.M. (1951) - Thesis).

The Strangward A occurrence comprises a number of small showings, all in quartz-carbonate veins (Vail, J.R. (1957) - Thesis). The veins fill numerous parallel shear fractures of small displacement, associated with an 85-metres wide, vertical, northwest-striking fault zone. The veins are generally narrow, 30 centimetres on average, with the widest being about 1 metre. They can be traced for varying distances, up to about 180 metres. A vein about 1 kilometre away may be a continuation of the same system.

The veins comprise quartz or calcite or both, and locally contain centimetre-scale lenses of massive chalcopyrite, with lesser bornite and chalcocite. Malachite is common in the veins and wall rocks, and secondary covellite fills small fractures cutting the sulphides.

In one place, a 6-metres long breccia zone in carbonaceous sandstone is cut by numerous mineralized veins and veinlets. A 60-centimetre channel sample in this material assayed 4.35 per cent copper (Menzies, M.M. (1951) - Thesis, page 40). Other samples give very high copper assays, but they are obviously heavily mineralized.

BIBLIOGRAPHY

- EMPR PF (Sevensma, P.H. (1969): Prospectus map; see also Property File under 094K 009)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
Menzies, M.M. (1951): Geology and Mineralogy of the Strangward Copper Property, South Tetsa River, British Columbia; unpublished M.Sc. thesis, University of British Columbia.
*Vail, J.R. (1957): Geology of the Racing River area, British Columbia; unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 037**

NATIONAL MINERAL INVENTORY: 94K/5 Cu 1

NAME(S): **MEINDL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K05E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 26 39 N
LONGITUDE: 125 38 03 W
ELEVATION: 1980 Metres

NORTHING: 6481175
EASTING: 346254

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized quartz veins in Meindl 9 to 11 claims, 1.3 kilometres southwest of a major tributary of Toad River in the Muskwa Ranges, 55 kilometres south of Muncho Lake (Assessment Report 3216, Map 2).

COMMODITIES: Copper Cobalt

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Erythrite

COMMENTS: Erythrite is very rare.

ASSOCIATED: Quartz Carbonate Pyrite

COMMENTS: Carbonate is possibly ankerite.

ALTERATION: Malachite Limonite

COMMENTS: Limonite assumed to be product of oxidation.

ALTERATION TYPE: Sericitic Silicific'n Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform Stratabound Shear

CLASSIFICATION: Hydrothermal Epigenetic Replacement

TYPE: I06 Cu±Ag quartz veins

SHAPE: Tabular

DIMENSION: 730 x 1 Metres STRIKE/DIP: 035/75W TREND/PLUNGE:

COMMENTS: Overall strike length of mineralized zone; maximum width of individual veins. Approximate orientation of dyke margin, hosting veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal
Proterozoic			

LITHOLOGY: Altered Dolomitic Rock
Slaty Argillite
Siliceous Dolomite
Argillaceous Dolomite
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation is part of Helikian Muskwa Assemblage. Forms hanging-wall of Gataga thrust. Mineralization is associated with dykes.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

METAMORPHIC TYPE: Contact

RELATIONSHIP:

GRADE:

COMMENTS: Situated on the margin of the Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1971

SAMPLE TYPE: Chip

COMMODITY

GRADE

Copper

14.8000

Per cent

COMMENTS: Chip sample ME-12, taken over 1.3 metres.

REFERENCE: Assessment Report 3216, Map 2.

CAPSULE GEOLOGY

This copper showing is on a ridge west of a major tributary of Toad River in the mountainous Muskwa Ranges of the Northern Rocky Mountains, 55 kilometres south of Muncho Lake (Assessment Report 3216, Map 2).

The occurrence is in the hanging-wall of a large thrust, the Gataga thrust, which lies along the western margin of the Muskwa

CAPSULE GEOLOGY

Anticlinorium, a north-northwest trending regional structure characterized by folding and thrust faulting. Like the main part of the anticlinorium to the east, the Gataga thrust sheet consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, along with unconformably overlying Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Diabase or gabbroic dykes of Proterozoic age are common in the region.

The Meindl showing is hosted in the Aida Formation of the Muskwa Assemblage, closely associated with basic dykes (Geological Survey of Canada Memoir 373, Paper 67-68). The Aida Formation comprises pale grey slaty argillite, and siliceous and argillaceous dolostone (Assessment Report 3216). The southwest of the property is underlain by the overlying Gataga Formation and the Cambrian Atan Group. Bedding strikes north-northwest and dips moderately west. Faults in the area have a northwesterly or easterly trend (Geology, Exploration and Mining in British Columbia 1971). The basaltic or diabasic dykes range in thickness from 1 to 30 metres. Most strike north and dip steeply west, but some strike northeast and dip northwest. Slight contact metamorphism and alteration, namely sericitization and silicification, is present for about 1 metre from the dyke margins. In addition, dyke margins are generally faulted or sheared.

Copper mineralization is in quartz veins which primarily occur along the northwest margin of a steeply-dipping, northeast-striking dyke which transects a number of north-trending dykes. Veins also occur in fault zones a short distance from the dykes. The veins form discontinuous lenses from 15 to 90 centimetres in width and up to 25 metres in length. Less significant veins occur on the southeastern margin of the dyke. Locally, septa of sedimentary rock intervene between the veins and the dyke. The overall strike length of the mineralization is about 730 metres.

The veins range from almost entirely quartz, to quartz and carbonate (possibly ankerite), to a mixture of quartz and inclusions of strongly altered, mainly dolomitic sedimentary rock. Mineralization consists of chalcopyrite, with minor pyrite, bornite, malachite and rare erythrite. Chalcopyrite forms clusters or small lenses in the veins, and appears to be preferentially concentrated in or next to the sedimentary wall rock or inclusions, even replacing that material. Generally, however, copper mineralization is erratic in continuity and grade. Small high grade zones, marked by strong alteration and oxidation, yielded the best assay results. A 1.3-metre chip sample from a quartz vein, on which the occurrence is centred, was assayed at 14.8 per cent copper (Assessment Report 3216).

BIBLIOGRAPHY

- EMPR GEM 1970-45; *1971-91
- EMPR ASS RPT *3216
- EMPR PF (Sevensma, P.H. (1969): Prospectus covering Meindl property)
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/14

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 038**

NATIONAL MINERAL INVENTORY: 94K/13 Fsp 1

NAME(S): **MUNCHO LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K13W 094K13E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 56 34 N
LONGITUDE: 125 46 07 W
ELEVATION: 860 Metres

NORTHING: 6536978
EASTING: 340702

LOCATION ACCURACY: Within 5 KM

COMMENTS: Located somewhat arbitrarily, from descriptions, on Alaska Highway at southeastern corner of Muncho Lake (Geological Survey of Canada Paper 44-28; Minister of Mines Annual Report 1960, page 134).

COMMODITIES: Fluorite Barite

MINERALS

SIGNIFICANT: Fluorite Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.
TYPE: I11 Barite-fluorite veins

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Unknown	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Limestone

HOSTROCK COMMENTS: Limestone host rock could be Silurian or Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

This is a weakly documented and hence suspect occurrence, and not to be confused with the BV or Muncho Lake Barite developed prospect (094N 002) 9 kilometres to the north. The original 1944 reference simply states that veins of fluorite and barite are reported to be relatively common in the limestone south and east of Muncho Lake, presumably near the Alaska Highway (Geological Survey of Canada Paper 44-28; Minister of Mines Annual Report 1960, page 134). Stratabound and vein barite is indeed present at several localities in the region, mainly in Devonian carbonate rocks, especially the Middle Devonian Dunedin Formation; minor fluorite is present in some of them. It is possible that the reference refers to occurrences a considerable distance from Muncho Lake itself.

The Dunedin Formation outcrops within a northwest-trending belt about 10 kilometres east of Muncho Lake, but is apparently not represented near the highway around Muncho Lake, where Silurian and other Devonian carbonate units occur (Geological Survey of Canada Map 1343A, Memoir 373). Given the uncertainties of location and stratigraphic host rock, the occurrence is somewhat arbitrarily located, namely next to the highway at the southeastern corner of Muncho Lake, which is underlain by the Silurian Nonda Formation.

BIBLIOGRAPHY

EMPR AR 1960-134
EMPR OF 1992-16, p. 76
GSC MEM 259-141; 373
GSC P 44-28
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/16

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 039**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALCAN COPPER**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K13E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 51 14 N
LONGITUDE: 125 42 22 W
ELEVATION: 1280 Metres

NORTHING: 6526939
EASTING: 343896

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from description, on workings about 1.6 kilometres northeast of Mile Post 450 on the Alaska Highway, 10 kilometres south-southeast of Muncho Lake (Property File - O'Grady, B.T. (1946): Summary report).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform Massive Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: Metres STRIKE/DIP: 315/65E TREND/PLUNGE:
COMMENTS: Approximate attitude of host sedimentary rocks.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Silurian-Devonian	Undefined Group	Muncho-McConnell	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Dolomite
Sandy Dolomite
Basic Dike
Basic Sill

HOSTROCK COMMENTS: Mineralization related to silicified zones around basic intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Near northern tip of Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1946
SAMPLE TYPE: Grab
COMMODITY GRADE
Copper 5.7000 Per cent
COMMENTS: Sample of massive sulphide mineralization in quartz lens.
REFERENCE: Property File - O'Grady, B.T. (1946): Summary report.

CAPSULE GEOLOGY

The Alcan Copper showing is situated about 1.6 kilometres northeast of Mile Post 450 on the Alaska Highway, 10 kilometres south-southeast of Muncho Lake (Property File - O'Grady, B.T. (1946): Summary report). This is an old showing, and its location is plotted approximately, based on a written description. No work is documented beyond trenching done in the mid-1940s.

Based on its location, the showing is hosted in fine-grained dolostone, sandy dolostone and limestone of the Upper Silurian to Lower Devonian Muncho-McConnell Formation (Geological Survey of Canada Memoir 373, Map 1343A). In this area, around the northern tip of the Muskwa Anticlinorium in the Northern Rocky Mountains, the rocks are deformed by moderate folds and thrusts (Geological Society of America, Geology of North America, Volume G-2, page 639). All rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

CAPSULE GEOLOGY

The carbonate rocks on the property strike northwest and dip steeply northeast. They are intruded by dykes and sill-like basic intrusions up to 10 metres wide which are probably responsible for zones of silicification in the adjacent limestones. The silicified zones contain lenses and stringers of quartz which contain sporadic disseminated pyrite, chalcopyrite and malachite mineralization. One quartz lens 15 centimetres wide contains a band of massive sulphides 50 centimetres long. This material assayed 5.7 per cent copper (Property File - O'Grady, B.T. (1946): Summary report).

BIBLIOGRAPHY

EMPR PF (O'Grady, B.T. (1946): Summary report on Alcan
Prospecting and Developing Syndicate.
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/01/04

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 040**

NATIONAL MINERAL INVENTORY: 94K/12 Cu 2

NAME(S): **BOB 3-4**, NEIL VEIN, RAM CREEK,
MAD, RIM, ANN,
STR, GEO, REX

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094K12E
BC MAP:
LATITUDE: 58 33 02 N
LONGITUDE: 125 32 04 W
ELEVATION: 2350 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6492791
EASTING: 352519

COMMENTS: Located on trenches near eastern, common corner of Bob 3 and 4 claims, 6.5 kilometres south of Yedhe Creek, 10 kilometres east of Toad River in the Muskwa Ranges (Assessment Report 3420, Map 14).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Galena
COMMENTS: Galena is rare.
ASSOCIATED: Quartz Ankerite Pyrite
ALTERATION: Malachite Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Podiform Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 1100 x 1 Metres STRIKE/DIP: 045/90 TREND/PLUNGE:
COMMENTS: Length of mineralized zone and typical thickness of individual veins.
General attitude of shear zone hosting mineralized veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal
Proterozoic			

LITHOLOGY: Calcareous Dolomitic Mudstone
Calcareous Dolomitic Slate
Silty Mudstone
Dolomite
Limestone
Quartzite
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1971
SAMPLE TYPE: Chip
COMMODITY GRADE
Copper 3.6700 Per cent
COMMENTS: From Trench 2, in breccia zone, taken over 0.9 metre.
REFERENCE: Assessment Report 3420.

CAPSULE GEOLOGY

This copper prospect is centred on the Bob 3 and 4 claims, 6.5 kilometres south of Yedhe Creek, 10 kilometres east of Toad River, in the Muskwa Ranges in the Northern Rocky Mountains (Assessment Report 3420, Map 14).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate

CAPSULE GEOLOGY

folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The property is underlain mainly by the Aida Formation of the Muskwa Assemblage (Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). In this area, this unit comprises calcareous and dolomitic mudstone and slate, silty mudstone, dolostone, limestone and minor quartzite (Assessment Report 3420; Property File - Adamson, R.S., 1971). Bedding strikes northwest and dips moderately southwest. Locally the rocks are folded, sheared and faulted, and are intruded by several northeast-striking diabase dykes.

A prominent shear zone passes through the area, striking about 045 degrees. It is approximately 30 metres wide and has been traced for 1.1 kilometres horizontally, and 425 metres vertically. Coincident with the shear zone is a large diabase dyke, forming a resistant spur. It dips steeply and is between 2 and 12 metres thick. Its contacts are sheared and altered, as is the adjacent slaty mudstone wall rock. The dyke and the shear zone are important as they host a discontinuous series of mineralized quartz-carbonate veins, occurring at or close to the dyke's contacts in the shear zone. The constituent veins have the same general orientation, but may vary in attitude on a smaller scale. The veins range in thickness from a few centimetres to 2.75 metres; most are under 1 metre thick. They may have originally been a single vein, known as the Neil vein, which has been disrupted by shearing into smaller lenses. The age relationship between the dyke's intrusion and the veining is uncertain; at least some shearing post-dates both.

The veins are composed of quartz and ankerite, and may have inclusions of wall rock. Chalcopyrite is sporadic and occurs in variable amounts, along with very minor bornite and pyrite. Secondary malachite and azurite are common. Very locally, there are small blebs and stringers of galena.

This occurrence is centred on veins at the eastern end of the exposed dyke, on a small topographic peak at the common corner of the Bob 3 and 4 claims (Assessment Report 3420, Map 14). (A related occurrence, the Ann 18 prospect (094K 057), is towards the western end.) This area is also the site of a major breccia zone, developed between a thick-bedded dolostone subunit and the shear zone. The zone comprises angular fragments of black dolostone in a stockwork of quartz and brown carbonate. It is at least 215 metres long and 7.5 metres wide, and strikes 080 degrees, somewhat oblique to the shear zone. Chalcopyrite is disseminated in the quartz. The best chip sample from this area came from Trench 2 in the breccia zone, assaying 3.67 per cent copper over 0.9 metre (Assessment Report 3420). The average copper content was 2.4 per cent across 1.8 metres, in oxidized rock (Assessment Report 3420). A chip sample in unaltered material assayed 4.8 per cent copper over 7 metres (Assessment Report 3420, page 2; Property File - Adamson, R.S., 1971).

Renewed interest in the property was shown in 1992 (George Cross News Letter, Number 87, May 5).

BIBLIOGRAPHY

- EMPR GEM 1970-42; *1971-78; 1972-492
EMPR ASS RPT *3420
EMPR PF (*Adamson, R.S. (1971): Summary Report on the Ram Creek Property)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
GCNL #87 (May 5), 1992
Vail, J.R. (1957): Geology of the Racing River area, British Columbia; unpublished M.Sc. thesis, University of British Columbia. Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/21

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 041**

NATIONAL MINERAL INVENTORY:

NAME(S): **PJ 105**, PJ NORTHEAST ZONE, BE,
SYBIL, ANDREW

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03W 094K03E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 10 35 N
LONGITUDE: 125 15 26 W
ELEVATION: 1900 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6450571
EASTING: 367249

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein in PJ 105 claim, 5 kilometres north of
Gataga River, 8 kilometres south-southwest of Churchill Peak in the
Muskwa Ranges (Assessment Report 2837, Map 3).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate Ankerite
COMMENTS: Carbonate is mainly ankerite.
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: 106 Cu±Ag quartz veins
DIMENSION: 60 x 2 Metres STRIKE/DIP: 025/ TREND/PLUNGE:
COMMENTS: Trend and exposed length of mineralized zone. Maximum width of
en echelon fissure quartz veins, which trend north.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Dolomitic Siltstone
Dolomite
Argillaceous Limestone
Slaty Argillite
Diabase Dike

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY: Copper GRADE
12.4000 Per cent
COMMENTS: Taken over 1.37 metres. Best value of several chip samples.
REFERENCE: Assessment Report 2837, page 5.

CAPSULE GEOLOGY

This copper showing is situated on the PJ 105 claim, also referred to in this property as the Northeast Zone, 5 kilometres north of the Gataga River, 8 kilometres south-southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2837, Map 3).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are

CAPSULE GEOLOGY

known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111).

Northeast to (more commonly) north-northwest trending, steeply-dipping diabase or gabbroic dykes are common in the region. These Proterozoic intrusions were structurally-controlled as their presence and orientation are closely related to regionally important fault and fracture zones in the Proterozoic sedimentary rocks.

The PJ claim group is underlain mainly by the Aida Formation of the Muskwa Assemblage, comprising dolomitic siltstone, dolostone, argillaceous limestone and slaty argillite (Geological Survey of Canada Memoir 373, Paper 67-68; Assessment Reports 2837, 5777, 10960). Slate, argillite and siltstone of the overlying Gataga Formation outcrop locally in the claim group. The strata strike northwest and dip moderately northeast or, mainly, southwest. Some isoclinal folding is present (Assessment Report 5777). Slaty cleavage strikes northwest and dips moderately southwest. A number of diabase dykes are present; most strike northeast to northwest and dip moderately to steeply west. Fault and fracture zones in the sedimentary rocks also strike northeast to northwest.

The mineralized zone at this occurrence consists of an en echelon fissure vein of quartz and carbonate (mainly ankerite), containing massive or disseminated chalcopyrite (Assessment Reports 2837, 5777). The zone trends 025 degrees and is exposed for 60 metres before being covered by ice and talus to the southwest. Float suggests its total length may be 120 metres or more. The vein within the zone trends approximately north. Its maximum thickness is 2 metres. Five chip samples taken across the vein ranged from 5.6 per cent copper over 2.1 metres to 12.4 per cent copper over 1.37 metres (Assessment Report 2837). A short distance west of the vein, malachite was noted in dolostone (Assessment Report 10960).

BIBLIOGRAPHY

EMPR GEM 1970-47; 1971-101; 1975-E170
EMPR EXPL 1982-348
EMPR ASS RPT *2837, 3471, 3472, 5777, 10960
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/17

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 042**

NATIONAL MINERAL INVENTORY:

NAME(S): **PJ 100, PJ NO. 2 ZONE, PJ NUMBER 2 ZONE, BE, ANDREW**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03E 094K03W
BC MAP:
LATITUDE: 58 09 34 N
LONGITUDE: 125 15 04 W
ELEVATION: 1870 Metres

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6448673
EASTING: 367546

LOCATION ACCURACY: Within 500M
COMMENTS: Located on mineralized vein in PJ 100 claim, 3.5 kilometres north of Gataga River, 9.5 kilometres south-southwest of Churchill Peak in the Muskwa Ranges (Assessment Reports 2837, Map 3; 5777, Map 3).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite
ASSOCIATED: Quartz Carbonate Ankerite Pyrite
COMMENTS: Carbonate is mainly ankerite.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 75 Metres STRIKE/DIP: 045/ TREND/PLUNGE:
COMMENTS: Approximate length and trend of mineralized zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE: Middle Proterozoic
GROUP: Undefined Group
FORMATION: Aida
IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Dolomitic Siltstone
Dolomite
Argillaceous Limestone
Slaty Argillite
Diabase Dike

HOSTROCK COMMENTS: Aida Formation is part of the Helikian Muskwa Assemblage.
Mineralization is closely associated with Proterozoic diabase dykes.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY: Copper GRADE: 13.0000 Per cent
COMMENTS: Taken over 0.75 metre. Best of a range of chip sample values.
REFERENCE: Assessment Report 2837.

CAPSULE GEOLOGY

This copper showing is situated on the PJ 100 claim, also referred to in this property as the Number 2 Zone, 3.5 kilometres north of the Gataga River, 9.5 kilometres south-southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2837, Map 3).
The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111).

CAPSULE GEOLOGY

Northeast to (more commonly) north-northwest trending, steeply-dipping diabase or gabbroic dykes are common in the region. These Proterozoic intrusions were structurally-controlled as their presence and orientation are closely related to regionally important fault and fracture zones in the Proterozoic sedimentary rocks.

The PJ claim group is underlain mainly by the Aida Formation of the Muskwa Assemblage, comprising dolomitic siltstone, dolostone, argillaceous limestone and slaty argillite (Geological Survey of Canada Memoir 373, Paper 67-68). Slate, argillite and siltstone of the overlying Gataga Formation outcrop locally in the claim group. The strata generally strike northwest and dip moderately east or, mainly, southwest. Slaty cleavage strikes northwest and dips moderately southwest. A number of diabase dykes, 3 to 60 metres thick, are present; most strike northeast to northwest and dip moderately to steeply west. Fault and fracture zones in the sedimentary rocks also strike northeast to northwest.

The mineralized zone at the PJ 100 occurrence is closely associated with the intersection of northeast-trending and north-northwest trending diabase dykes (Assessment Reports 2837, 5777, 10960). Fractures and quartz veins with these orientations are present, possibly within or marginal to the dykes as well as in the host sedimentary rocks. Mineralized quartz-carbonate (mainly ankerite) veins are primarily controlled by northeast-trending structures, northeast of the main intersection. They are exposed for approximately 60 metres, and are generally less than 1 metre thick. The veins contain stringers or massive pods of chalcopyrite. Minor pyrite and chalcocite are also present. Chip samples taken from trenches here gave assays ranging from 1.45 per cent copper over 0.9 metre to 13 per cent copper over 0.75 metre (Assessment Report 2837). This zone is at least 75 metres long, but may reach a length of about 300 metres southwestwards before being covered by overburden.

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EMPR EXPL 1982-348
EMPR ASS RPT *2837, 2888, 3471, 3472, 5777, 10960
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/24

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 043**

NATIONAL MINERAL INVENTORY: 94K/11 Cu 6

NAME(S): **JAN, FOX, RANDI,**
TAX, CAL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K11W 094K06W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 30 13 N
LONGITUDE: 125 27 31 W
ELEVATION: 1800 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6487402
EASTING: 356739

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Jan 9 claim, 8.5 kilometres southwest of Yedhe Mountain in Muskwa Ranges (Geology, Exploration and Mining in British Columbia 1970; 1970 claim map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: Metres STRIKE/DIP: 315/
COMMENTS: Approximate strike of shear zones hosting mineralized veins.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Proterozoic
Proterozoic

GROUP

Undefined Group

FORMATION

Aida

IGNEOUS/METAMORPHIC/OTHER

Unnamed/Unknown Informal

LITHOLOGY: Dolomitic Mudstone
Dolomitic Siltstone
Dolomite
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

This minor copper showing is situated in the Jan 9 claim, 8.5 kilometres southwest of Yedhe Mountain in the Muskwa Ranges in the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia 1970; 1970 claim map).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The Jan claim group is underlain predominantly by the Aida Formation of the Muskwa Assemblage, which comprises dolomitic mudstone and siltstone, and dolostone (Geological Survey of Canada Memoir 373). The Fox claims, located 3.5 kilometres to the east, were explored at the same time and have the same geological characteristics.

Not much information is available. The sedimentary rocks are intruded by diabase dykes which have northwest-striking shear zones along their margins. The shear zones contain quartz-carbonate veins mineralized with chalcopyrite. Some trenching was done in 1970.

BIBLIOGRAPHY

EMPR GEM 1970-44

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1396
REPORT: RGEN0100

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GSC P 67-68
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GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/30

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 044**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 1

NAME(S): **P 75, MO**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 07 48 N
LONGITUDE: 125 10 55 W
ELEVATION: 1500 Metres

NORTHING: 6445262
EASTING: 371508

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein in P 75 claim, in headwaters of Gataga River, 12.5 kilometres south of Churchill Peak in the Muskwa Ranges (Assessment Report 2868, Map 4).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 60 x 7 Metres STRIKE/DIP: 340/80W TREND/PLUNGE:
COMMENTS: Approximate orientation, and exposed length and width of mineralized zone. Individual veins are much smaller and discontinuous.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Slaty Calcareous Siltstone
Slaty Calcareous Shale
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation is part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is situated on the P 75 claim, in the headwaters of the Gataga River, 12.5 kilometres south of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2868, Map 4).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A).

Northeast to (more commonly) north-northwest trending, steeply-dipping diabase or gabbroic dykes are common in the region. These Proterozoic intrusions were structurally-controlled as their presence and orientation are closely related to regionally important fault and fracture zones in the Proterozoic sedimentary rocks.

The area around the P 75 showing is underlain mainly by dark grey, locally slaty calcareous siltstone and shale of the Aida Formation of the Middle Proterozoic Muskwa Assemblage (Geological Survey of Canada Memoir 373; Geological Society of America, Geology of North America, Volume G-2, page 111). The strata generally strike north and dip gently from 5 to 30 degrees west. At least 10 diabase dykes intrude the area, striking north-northwest and dipping 85 degrees west to 90 degrees. They average 5 metres in thickness and some can be traced for about 250 metres.

Typical of the copper occurrences in the region, the P 75 is centred on a system of multiple, mineralized quartz-carbonate veins

CAPSULE GEOLOGY

within a broad shear or fault zone hosting a number of diabase dykes. The mineralized zone, striking about 340 degrees and dipping 80 degrees west, is 7.5 metres wide and is exposed for 60 metres. Individual veins are between 2.5 and 30 centimetres thick, and are present in the dykes as well as the sedimentary rocks, and along their contact. They are nowhere continuous for more than 2 metres before pinching out. The mineralization is weak and erratic, consisting of blebs of chalcopyrite and lenses of massive pyrite, and secondary malachite. A visual estimate of this zone was given as up to 1 per cent copper (Assessment Report 2868).

Another, better mineralized vein system is present 1.2 kilometres to the south in the P 12 claim (MINFILE 094K 045).

BIBLIOGRAPHY

EMPR GEM 1971-102
EMPR EXPL 1982-348
EMPR ASS RPT *2868, 10960
GSC MEM 373
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/11

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 045**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 1

NAME(S): **P 12, MO**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 07 11 N
LONGITUDE: 125 11 03 W
ELEVATION: 1295 Metres

NORTHING: 6444122
EASTING: 371341

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized veins in P 12 claim, near tributary of Gataga River, 13.5 kilometres south of Churchill Peak in the Muskwa Ranges (Assessment Report 2868, Map 4).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
COMMENTS: Bornite is minor.
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 120 x 4 Metres STRIKE/DIP: 340/80W TREND/PLUNGE:
COMMENTS: Orientation and approximate length and width of mineralized zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Slaty Calcareous Siltstone
Slaty Calcareous Shale
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation is part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is situated on the P 12 claim, near a tributary of the Gataga River in its headwaters, 13.5 kilometres south of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2868, Map 4).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A).

Northeast to (more commonly) north-northwest trending, steeply-dipping diabase or gabbroic dykes are common in the region. These Proterozoic intrusions were structurally-controlled, as their presence and orientation are closely related to regionally important fault and fracture zones in the Proterozoic rocks.

The area around the P 12 showing is underlain mainly by dark grey, locally slaty calcareous siltstone and shale of the Aida Formation of the Middle Proterozoic Muskwa Assemblage (Geological Survey of Canada Memoir 373; Geological Society of America, Geology of North America, Volume G-2, page 111). The strata generally strike north and dip gently from 5 to 30 degrees west. At least 10 diabase dykes intrude the area, striking north-northwest and dipping vertically to 85 degrees west. They average 5 metres in thickness and some can be traced for about 250 metres.

Typical of the copper occurrences in the region, the P 12 is centred on a system of multiple mineralized quartz-carbonate veins in

CAPSULE GEOLOGY

part of a broad shear or fault zone hosting a number of diabase dykes. The P 12 mineralized zone, striking about 340 degrees and dipping 80 degrees west, has an exposed length of 120 metres and width of 4.5 metres. The host shale and siltstone are generally altered and highly fractured giving the rock a brecciated appearance in places, and locally there is abundant malachite on fracture surfaces. Mineralization consists of blebs of chalcopyrite evenly distributed in the vein system, along with small amounts of bornite. Trenching revealed more details of the mineralization. Visual estimates of the grade ranged from 2 to 10 per copper (Assessment Report 2868).

Another but less well mineralized vein system is present 1.2 kilometres to the north (P 75, MINFILE 094K 044), and is probably part of the same zone of faulting, dyke intrusion, and vein mineralization (Assessment Report 2868).

BIBLIOGRAPHY

EMPR GEM 1971-102
EMPR EXPL 1982-348
EMPR ASS RPT *2868, 10960
GSC MEM 373
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/11

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 046**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 8

NAME(S): **D 81**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03W 094K06W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 13 30 N
LONGITUDE: 125 19 08 W
ELEVATION: 1800 Metres

NORTHING: 6456104
EASTING: 363810

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein in D 81 claim, 2 kilometres southeast of major tributary of Gagata River, 7 kilometres west-southwest of Churchill Peak in Muskwa Ranges (Assessment Report 2869, Map 4).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite visually estimated at 10 per cent.
ASSOCIATED: Quartz Carbonate Ankerite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 60 x 1 Metres STRIKE/DIP: 360/90 TREND/PLUNGE:
COMMENTS: Strike and approximate dip of mineralized vein, and its length and width (15 centimetres).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Diabase Dike
Calcareous Dolomitic Shale
Calcareous Dolomitic Siltstone
Calcareous Mudstone
Quartz Carbonate Ankerite Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is located in the D 81 claim, 2 kilometres southeast of a major tributary of the Gataga River, 7 kilometres west-southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2869, Map 4).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). Diabase or gabbroic dykes of Proterozoic age are common in the region.

The D group of claims is underlain mainly by the Aida Formation, with Gataga Formation rocks confined to the west and south, both of the Muskwa Assemblage (Geological Survey of Canada Memoir 373, Paper 67-68). The Aida Formation consists of dark grey, fine grained, laminated calcareous or dolomitic shale and siltstone, and mudstone. Locally the strata strike north and dip 5 to 30 degrees west. Over thirty diabase dykes, typically 5 metres wide, have been mapped in the claim group. They strike north-northwest and dip about 85 degrees west, although a few have a transverse, easterly strike.

CAPSULE GEOLOGY

Fracture-controlled quartz-carbonate veins are commonly associated with the dykes but few are mineralized.

The D 81 occurrence is centred on a mineralized, banded, quartz-carbonate (some ankerite) vein (Assessment Report 2869). The vein strikes north and fills a fracture in a sheared diabase dyke. It is 6 metres long and 15 centimetres wide. Pods of high grade chalcopyrite are distributed evenly along its length. A visual estimate of the overall grade is 10 per cent "copper" (Assessment Report 2869). Secondary malachite is also present.

BIBLIOGRAPHY

EMPR GEM 1971-97
EMPR EXPL 1982-348
EMPR ASS RPT *2869, 10960
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/28

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 047**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 8

NAME(S): **D 86**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03W 094K06W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 13 49 N
LONGITUDE: 125 18 57 W
ELEVATION: 1828 Metres

NORTHING: 6456685
EASTING: 364009

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein in D 86 claim, 1.75 kilometres southeast of major tributary of Gagata River, 7 kilometres west-southwest of Churchill Peak in Muskwa Ranges (Assessment Report 2869, Map 4).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite visually estimated at up to 1 per cent.
ASSOCIATED: Quartz Carbonate Pyrite
COMMENTS: Pyrite is present in adjacent diabase dyke.
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 9 x 1 Metres STRIKE/DIP: 340/90 TREND/PLUNGE:
COMMENTS: Exposed length and width of mineralized vein, and approximate orientation.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal
Proterozoic			

LITHOLOGY: Hornfelsed Phyllite
Calcareous Dolomitic Shale
Calcareous Dolomitic Siltstone
Calcareous Mudstone
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is located in the D 86 claim, 1.75 kilometres southeast of a major tributary of the Gataga River, 7 kilometres west-southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2869, Map 4).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). Diabase or gabbroic dykes of Proterozoic age are common in the region.

The D group of claims is underlain mainly by the Aida Formation, with Gataga Formation rocks confined to the west and south, both of the Muskwa Assemblage (Geological Survey of Canada Memoir 373, Paper 67-68). The Aida Formation consists of dark grey, fine grained, laminated calcareous or dolomitic shale and siltstone, and mudstone.

CAPSULE GEOLOGY

Locally the strata strike north and dip 5 to 30 degrees west. Over thirty diabase dykes, typically 5 metres wide, have been mapped in the claim group. They strike north-northwest and dip about 85 degrees west, although a few have a transverse, easterly strike. Fracture-controlled quartz-carbonate veins are commonly associated with the dykes but few are mineralized.

The D 86 occurrence is centred on a mineralized quartz-carbonate vein at the contact between a 4.5-metres wide diabase dyke and hornfelsed, fractured Aida Formation phyllite (Assessment Report 2869). The vein strikes north-northwest and is subvertical. It is about 1 metre wide and is exposed for 9 metres before being covered by talus. Chalcopyrite pods are evenly distributed along the length of the vein, but overall the grade is low, visually estimated at up to 1 per cent "copper" in places (Assessment Report 2869). Secondary malachite is also present. The adjacent dyke has disseminated pyrite.

This occurrence is lower grade than the D 81 showing (094K 046) 600 metres to the south-southwest, but given its greater width, it has possibly more depth potential (Assessment Report 2869).

BIBLIOGRAPHY

EMPR GEM 1971-97
EMPR ASS RPT *2869
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/28

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 048**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRAM NORTHEAST**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 00 53 N
LONGITUDE: 124 34 57 W
ELEVATION: 2220 Metres

NORTHING: 6431445
EASTING: 406503

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein, immediately northeast of Fram claim group, 10 kilometres southwest of Mount Sylvia in the Muskwa Ranges (Assessment Report 2875, Map 1).

COMMODITIES: Lead Silver

MINERALS

SIGNIFICANT: Galena
ASSOCIATED: Quartz Carbonate Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: Metres STRIKE/DIP: 010/90
COMMENTS: Approximate orientation of shear zone and vein hosting mineralization.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Dolomitic Mudstone
Dolomitic Siltstone
Dolomite
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1970
SAMPLE TYPE:	Chip		
COMMODITY		GRADE	
Silver		116.0000	Grams per tonne
Lead		9.6000	Per cent

COMMENTS: Sample F-9, from mineralized quartz-carbonate vein in shear zone.
REFERENCE: Assessment Report 2875, Map 1.

CAPSULE GEOLOGY

The Fram Northeast is a minor lead showing, 10 kilometres southwest of Mount Sylvia in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2875, Map 1). The main mineralization in this general locality is actually covered by another, related MINFILE occurrence 2.5 kilometres to the southwest, the Fram copper showing (094F 004).

These occurrences are in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111).

This assemblage of carbonate and clastic rocks has been divided into seven formations. The Fram Northeast showing is mostly in the Aida Formation, a 1200 to 1800-metres thick succession of dolomitic

CAPSULE GEOLOGY

mudstone and siltstone, dolostone, and minor mudstone, sandstone and limestone (Geological Survey of Canada Memoir 373, Paper 67-68). In this area, as well as regionally, these rocks are unconformably overlain by Lower Cambrian sedimentary rocks of the Atan Group. All rocks are gently folded, and some have slaty cleavage. The Proterozoic rocks are cut by northwest to northeast-striking, steeply west-dipping diabase and gabbro dykes.

At the Fram Northeast showing, the Aida Formation generally strikes northwest and dips about 20 degrees southwest. The Atan Group to the east, apparently in fault contact, consists of a thin basal conglomerate and quartzite, overlain by thick-bedded dolostones (Assessment Report 2875; Geological Survey of Canada Map 1343A). A vertical shear zone occurs in the Aida Formation 250 metres west of this contact. Within the shear zone is a north-northeast striking quartz-carbonate vein containing galena, and probably pyrite. A chip sample was assayed at 9.6 per cent lead and 116 grams per tonne silver (Assessment Report 2875, Map 1).

BIBLIOGRAPHY

EMPR GEM 1971-71
EMPR ASS RPT *2875
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/08

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 049**

NATIONAL MINERAL INVENTORY: 94K/6 Cu 4

NAME(S): **HD 149**, BE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 15 38 N
LONGITUDE: 125 21 59 W
ELEVATION: 2180 Metres

NORTHING: 6460158
EASTING: 361160

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein in HD 149 claim, on ridge 8 kilometres west of Tehran Peak in Muskwa Ranges (Assessment Report 2924, Map 3).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 6 x 1 Metres STRIKE/DIP: 330/80W TREND/PLUNGE:
COMMENTS: Length and width (1.5 metres) of vein, and its approximate, general attitude assuming structural control similar to dyke orientation.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Gataga	

LITHOLOGY: Shale
Slate

HOSTROCK COMMENTS: Gataga Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This minor copper showing is in the HD 149 claim, on a ridge 8 kilometres west of Tehran Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2924, Map 3).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Exposed in the structure are Middle Proterozoic (Helikian) carbonate and clastic rocks of the Muskwa Assemblage, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Diabase or gabbroic dykes of Proterozoic age are common in the region.

The eastern part of the HD claim group is underlain by shale and slate of the Gataga Formation of the Muskwa Assemblage (Geological Survey of Canada Memoir 373, Paper 67-68; Assessment Reports 2924, 10960). The strata strike northwest and dip gently to moderately southwest. Numerous diabase dykes intrude the rocks, striking about 330 degrees and dipping steeply west. Sedimentary rocks of the Cambrian Atan Group underlie the western part of the claim group, but host no documented mineralization.

Very few details of the mineralization in the claim group are available. It is confined to the Gataga Formation and consists of fracture-filling quartz veins closely associated with diabase dykes. This occurrence is centred on a 6-metres long, 1.5-metres wide quartz vein mineralized with chalcopyrite and malachite (Assessment Report 2924, Map 3). Some of the nearby float contains "high grade" chalcopyrite.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1408
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR GEM 1971-95
EMPR EXPL 1982-348
EMPR ASS RPT *2924, 10960
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/30

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 050**

NATIONAL MINERAL INVENTORY: 94K/6 Cu 1, 7

NAME(S): **TORO**, L, JED 1,3,
DAVIS, CHURCHILL, BIRD,
CARIBOU

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094K06E

MINING DIVISION: Liard

BC MAP:
LATITUDE: 58 22 37 N
LONGITUDE: 125 11 45 W

UTM ZONE: 10 (NAD 83)

ELEVATION: 2270 Metres
LOCATION ACCURACY: Within 500M

NORTHING: 6472774
EASTING: 371587

COMMENTS: Located on adits on mineralized vein, on slopes 2 kilometres west of Churchill Creek, 4.5 kilometres northeast of Falaise Mountain in Muskwa Ranges (Geology, Exploration and Mining in British Columbia 1971).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform Stratabound
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 1830 x 3 Metres STRIKE/DIP: 355/90 TREND/PLUNGE:
COMMENTS: Exposed length and approximate average width of mineralized veins.
Orientation of veins, following margins of dykes.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Dolomite
Slate
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation is part of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y
CATEGORY: Combined YEAR: 1970
QUANTITY: 1423860 Tonnes
COMMODITY: Copper GRADE: 3.4200 Per cent
COMMENTS: Proven and probable reserves calculated as part of a 1970 feasibility study by MacDonald Consultants.
REFERENCE: T. Schroeter, personal communication, 1997.

CAPSULE GEOLOGY

This copper occurrence is situated in very rugged terrain, on a ridge 2 kilometres west of Churchill Creek, 4.5 kilometres northeast of Falaise Mountain in the Muskwa Ranges of the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia 1971, page 94). A related occurrence, the Churchill showing (094K 009), is roughly 3 kilometres to the south (Assessment Report 6471).
The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as

CAPSULE GEOLOGY

Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A).

The Toro developed prospect is in the Aida Formation of the Muskwa Assemblage, which here consists of interbedded dolostone and slate, with thicker subunits of slate and carbonate (Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). The rocks are strongly folded about a northwesterly axis. Bedding strikes around 315 degrees and dips moderately southwest or locally northeast. The western part of the property is underlain by gently-west dipping clastics of the Cambrian Atan Group. The Aida Formation is intruded by at least three large diabase dykes, clearly Proterozoic because they are truncated by the sub-Cambrian unconformity. The dykes strike just west of north and dip steeply.

The mineralization is hosted in quartz-carbonate veins, most of which follow the margins of two of the dykes, or locally lie within them. The veins are exposed intermittently for over 1830 metres along the dykes, and vary considerably in width and degree of mineralization. Chalcopyrite occurs mostly as lenses and stringers in the veins, but its intensity is erratic; some veins are essentially barren.

The best vein is exposed for approximately 150 metres and is 2.5 metres wide on average, but ranges up to 9 metres in width. Surface samples of the vein averaged 2.95 per cent copper over 2.4 metres (Geology, Exploration and Mining in British Columbia 1971). To explore the vein further, two adits were dug in 1966 and 5 holes were diamond drilled from them. Drill intersections at -25 metres in four of them averaged only 0.66 copper over 4.1 metres, indicating the variable and discontinuous grade of the mineralization (Geology, Exploration and Mining in British Columbia 1971).

In 1966 the Northern Miner reported that the deposit contains 180,000 tonnes grading at 8 per cent copper, although the sampling results given above suggest a much lower grade (National Mineral Inventory).

The dykes and veins may extend for at least 3 kilometres farther south, towards the Churchill occurrence, as suggested by malachite visible in the cliffs (Assessment Report 6471).

As part of a 1970 feasibility study, MacDonald Consultants calculated proven and probable reserves at 1,423,860 tonnes grading 3.42 per cent. In 1971, Chapman, Wood & Griswold calculated 'semi-proven' and probable reserves at 1,574,453 tonnes grading 3.38 per cent copper. Reserves were calculated to the lowest underground level; both studies conclude that the possibility of defining more reserves at depth is excellent (T. Schroeter, personal communication, 1997).

BIBLIOGRAPHY

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- EMPR AR 1965-12; 1966-18
- EMPR GEM *1971-93
- EMPR EXPL 1977-E218
- EMPR ASS RPT *6471
- EMPR PF (Prince George District Geologist Office: Underground plans, sections, survey information and drill hole data)
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- EMR MP CORPFILE (Magnum Consolidated Mining Co. Ltd.; Canex Aerial Exploration Ltd.; Consolidated Churchill Copper Corporation Ltd.)
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
- N MINER July 21, 1966
- GCNL #204 (Oct.) 1973; #87 (May 5), 1992
- *Vail, J.R. (1957): Geology of the Racing River area, British Columbia; unpublished M.Sc. thesis, University of British Columbia.

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/15

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 051**

NATIONAL MINERAL INVENTORY:

NAME(S): **DPP NO.3**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 04 46 N
LONGITUDE: 125 49 55 W
ELEVATION: 2000 Metres

NORTHING: 6441059
EASTING: 333007

LOCATION ACCURACY: Within 500M

COMMENTS: Located among mineralized outcrops, eastern part of DPP No. 3 claim, 14 kilometres southwest of confluence of Gataga and South Gataga rivers in Muskwa Ranges (Assessment Report 7290, Figure 9).

COMMODITIES: Zinc Lead Copper Barite

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite

COMMENTS: Occur in calcitic fracture-fillings.

ASSOCIATED: Calcite Barite

COMMENTS: Barite is not associated with mineralization but is present in overlying rock unit.

ALTERATION: Malachite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound Breccia

CLASSIFICATION: Hydrothermal Epigenetic

SHAPE: Irregular

DIMENSION: 1000 Metres STRIKE/DIP: 320/75W

TREND/PLUNGE:

COMMENTS: Approximate strike length of discontinuous showings. General orientation of host rocks.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian	Atan	Undefined Formation	
Cambrian-Ordovician	Kechika	Undefined Formation	

LITHOLOGY: Massive Limestone
Argillaceous Limestone
Calcareous Shale
Calcareous Slate

HOSTROCK COMMENTS: Mineralization occurs in Atan Group just below contact with Kechika Group.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Situated in Gataga mineral district in Kechika Trough.

CAPSULE GEOLOGY

This occurrence is based on a few small zinc-copper showings in the DPP No.3 claim in the Driftpile Pass area, 14 kilometres southwest of the confluence of the Gataga and South Gataga rivers in the Muskwa Ranges of Northern British Columbia (Assessment Report 7290, Figure 9).

The DPP property is in the Gataga mineral district, in a belt of Proterozoic and Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Exploration and Mining Geology, Volume 1, page 1; Geological Survey of Canada Map 1713A). Locally the area is underlain by a steeply-southwest dipping succession consisting of, from northeast to southwest: the Cambrian Atan Group; the Cambro-Ordovician Kechika Group; the Ordovician to Lower Devonian Road River Group; and the Devono-Mississippian Earn Group, represented by the informally-named Gunsteel Formation (Assessment Report 7290; Geological Survey of Canada Memoir 373, Map 1343A). The last unit is host to important stratiform barite-lead-zinc mineralization at the Driftpile Creek deposit a few kilometres to the southwest (MINFILE 094K 066). Similar mineralization may exist in the baritic facies of Gunsteel Formation rocks in the DPP property, as suggested by lead soil anomalies (Assessment Report 7290). However, the DPP No.3 occurrence is based on a different form of mineralization, lower in the stratigraphy,

CAPSULE GEOLOGY

namely zinc and copper mineralization near the top of the Atan Group.

In this area, the Atan Group comprises a lower quartzite unit and an upper unit of massive, blue-grey micritic limestone, forming a ridge of steep cliffs. To the southwest, the overlying Kechika Group apparently consists of orange-brown weathering, dark grey argillaceous limestone and dark grey calcareous shale or slate. These and the younger units are moderately to tightly folded and are cut by steep reverse faults. The strata strike about 320 degrees and dip 75 degrees southwest.

Minor showings of sphalerite, galena, chalcopryrite and malachite are distributed erratically along the trace of the upper contact of the Atan Group limestone (Assessment Reports 6736, 7290). This occurrence is positioned towards the northern end of them. The mineralization is localized in calcitic fracture-fillings and in breccia. Well-formed crystals of sphalerite also occur in argillaceous bands in the limestone.

BIBLIOGRAPHY

EMPR EXPL 1977-E218; 1978-E250
EMPR ASS RPT 6736, 6881, *7290
GSC MEM 373
GSC P 88-1E, pp. 1-12
GSC MAP 1343A; 1713A
EMG, 1992, *Volume 1, pp. 1-20
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 052**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 7, 2

NAME(S): **BOOK 9-10**, PJ PELLETIER ZONE, BOOK (SOUTH ZONE),
BE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094K03W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 09 08 N
LONGITUDE: 125 16 40 W
ELEVATION: 1980 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6447922
EASTING: 365950

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized veins straddling Book 9 and 10 claims and PJ claims to south, 3 kilometres north of Gataga River, 11 kilometres south-southwest of Churchill Peak in the Muskwa Ranges (Assessment Reports 2638, 2837).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Galena
COMMENTS: Chalcopyrite visually estimated at 2 to 5 per cent by volume in some veins. Galena is minor.

ASSOCIATED: Quartz Carbonate Ankerite
COMMENTS: Carbonate is mainly ankerite.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Massive Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

SHAPE: Tabular
DIMENSION: 850 x 60 Metres STRIKE/DIP: 360/65W TREND/PLUNGE:
COMMENTS: Approximate length and maximum width of vein and stockwork system, situated towards the south of a 180-metre wide reverse fault zone. General orientation of veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	
Middle Proterozoic	Undefined Group	Gataga	

LITHOLOGY: Dolomitic Siltstone
Dolomite
Slate
Argillaceous Limestone
Argillite
Slaty Argillite
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida and Gataga formations form part of the Helikian Muskwa Assemblage

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This occurrence deals with a fairly extensive mineralized zone that straddled the boundary between two adjacent properties explored by different companies in 1970. It is referred to here as, primarily, the Book 9-10 (also known as the South zone) covering these claims in the property to the north (Assessment Report 2638, Geology, Exploration and Mining in British Columbia 1971), and as the PJ Pelletier zone, referring to that part lying in the PJ group of claims to the south (Assessment Reports 2837, 5777). This copper prospect is situated 3 kilometres north of the Gataga River, 11 kilometres south-southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains.

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faults and moderate folding. Rocks as old as Middle Proterozoic (Helikian) outcrop in the structure, along with Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong

CAPSULE GEOLOGY

to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111).

Northeast to (more commonly) north-northwest trending, steeply-dipping diabase or gabbroic dykes are common in the region. These Proterozoic intrusions were structurally-controlled as their presence and orientation are closely related to regionally important fault and fracture zones in the Proterozoic sedimentary rocks.

The Book and PJ claim groups are underlain mainly by the Aida Formation of the Muskwa Assemblage, comprising dolomitic siltstone, dolostone, argillaceous limestone, and slaty argillite (Assessment Reports 2638, 2837, 10960; Geological Survey of Canada Memoir 373, Paper 67-68). Slate, argillite and siltstone of the overlying Gataga Formation also outcrop in the immediate area (Assessment Report 5777). The strata strike north-northwest and dip moderately east or west. Some isoclinal folding is present. Slaty cleavage strikes northwest and dips moderately southwest. A number of diabase dykes, between 3 and 60 metres thick, in the north and centre of the area strike northeast to northwest and dip moderately to steeply west. Fault and fracture zones in the sedimentary rocks also strike northeast to northwest.

An east-verging reverse fault zone up to 180 metres wide can be traced in the general area from north to south. Some margins of dykes which lie in this zone are sheared. The zone is important as it hosts many mineralized quartz-carbonate veins. The Book 9-10 occurrence is towards the south of this fault zone (the Book 6 occurrence, MINFILE 094 019, is about 1.5 kilometres away in the north), and comprises a system of north-striking quartz-carbonate (primarily ankerite) veins and quartz stockworks with a total length of about 850 metres and maximum width of about 60 metres (Assessment Reports 2837, 5777). Individual vein widths are typically 1.5 to 2.5 metres, and they dip moderately to steeply west. Mineralization is variable and erratic and consists of disseminations or lenses of chalcopyrite, the volume of which in some of the veins was visually estimated at 2 to 5 per cent or greater, and bornite and minor galena (Assessment Reports 2638, 2837). One band of massive chalcopyrite between 8 and 45 centimetres thick has been traced for over 30 metres.

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- EMPR GEM 1970-47; 1971-100, 101; 1975-E170
EMPR EXPL 1982-348
EMPR ASS RPT 2487, *2638, *2837, 3471, 3472, *5777, 10960
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/19

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 053**

NATIONAL MINERAL INVENTORY: 94K/2 Cu 1

NAME(S): **LYNDA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K02W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 07 02 N
LONGITUDE: 124 54 50 W
ELEVATION: 1780 Metres

NORTHING: 6443360
EASTING: 387251

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized veins, at headwaters of Gataga River, 1.2 kilometres southeast of Sicily Mountain in Muskwa Ranges of the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia, 1971, pages 103, 105).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Irregular
DIMENSION: 600 x 1 Metres STRIKE/DIP: 360/90
COMMENTS: Maximum length and width of mineralized veins, and approximate orientation of fracture zone.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Shale
Diabase Dike
Shaly Limestone
Dolomite
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest Muskwa Anticlinorium.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Lynda is a minor copper showing, situated at the headwaters of the Gataga River, 1.2 kilometres southeast of Sicily Mountain in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia, 1971, page 105).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111). This assemblage of carbonate and clastic rocks has been divided into seven formations. The Lynda occurrence is in the Aida Formation, a 1200 to 1800-metre thick succession of dolomitic mudstone and siltstone, dolostone, and minor mudstone, sandstone and limestone (Geological Survey of Canada Memoir 373, Paper 67-68). All rocks are gently folded, and some have slaty cleavage. Northwest to northeast-striking, steeply dipping diabase and gabbro dykes are a common feature of the region.

The Lynda showing is situated in shale, shaly limestone and dolostone of the Aida Formation, which are cut by several diabase dykes (Geology, Exploration and Mining in British Columbia, 1971). The strata are gently folded, striking northwest and generally

CAPSULE GEOLOGY

dipping gently west or southwest. Most dykes strike north-northwest; some strike northeast or east. One dyke, which branches into two, follows a north-trending fracture zone. The showing is centred on this zone, which contains mineralized quartz-carbonate veins, closely associated with the dyke contact. The veins are a few centimetres to 1.2 metres wide, and extend for about 600 metres. The veins are mineralized with chalcopyrite and pyrite in irregular lenses and stringers, such that the grade across the veins is erratic.

Just over a kilometre to the northeast is another northerly-trending quartz-carbonate vein, but it is thin and only weakly mineralized.

BIBLIOGRAPHY

EMPR GEM 1971-103, 105
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/08

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 055**

NATIONAL MINERAL INVENTORY: 94K/3 Cu 6

NAME(S): **428 SOUTH**, 428, BE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K03E 094K03W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 11 16 N
LONGITUDE: 125 15 02 W
ELEVATION: 1980 Metres

NORTHING: 6451825
EASTING: 367684

LOCATION ACCURACY: Within 500M

COMMENTS: Located in approximate centre of mineralized zone, in claim 24 of 428 claim group, 6.5 kilometres north of Gataga River, 7 kilometres south-southwest of Churchill Peak in Muskwa Ranges (Assessment Report 2644, Geology Map).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena
COMMENTS: Galena is very minor.
ASSOCIATED: Quartz Ankerite Pyrite
ALTERATION: Quartz Malachite Azurite Limonite
ALTERATION TYPE: Silicific'n Sericitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Bladed
MODIFIER: Faulted
DIMENSION: 1000 x 60 Metres STRIKE/DIP: 360/70W TREND/PLUNGE:
COMMENTS: Approximate orientation and maximum length and width of fault zone hosting mineralized vein system.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Slaty Argillite
Argillaceous Limestone
Dolomite
Diabase Dike
Quartz Ankerite Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY GRADE
Copper 3.5100 Per cent
COMMENTS: Chip sample 4-10, taken over 0.9 metre, from high grade vein.
REFERENCE: Assessment Report 2644, Geology Map.

CAPSULE GEOLOGY

The 428 South copper showing is centred in claim 24 in the 428 claim group, 6.5 kilometres north of the Gataga River, 7 kilometres southwest of Churchill Peak in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Reports 2644, Geology Map; 3318, Map 2).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111,

CAPSULE GEOLOGY

639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest trending diabase dykes of Proterozoic age are common in the region.

The 428 claim group is underlain mainly by the Aida Formation of the Muskwa Assemblage, comprising slaty argillite, argillaceous limestone and dolostone (Geological Survey of Canada Memoir 373, Paper 67-68; Assessment Reports 2644, 3318). The strata strike northwest and dip gently to moderately southwest. They are intruded by diabase dykes, some of them 20 metres thick, which strike north or north-northwest and dip steeply west.

A major fault zone passes through the centre of the claim group, striking north to northwest and dipping west about 70 degrees. It can be traced for over 3 kilometres, and is generally 15 to 60 metres wide. The zone is important as it contains numerous mineralized quartz-carbonate veins and vein systems (Assessment Reports 2644, 3318). The veins strike around north and dip steeply to vertically. Many veins follow the margins of dykes in the fault zone, which may be sheared; others may be concordant with the prominent slaty cleavage in the sedimentary country rocks. Individual veins range in width from 1 centimetre to 3 metres, with an average of 1 metre, and some occur in swarms between 3 and 20 metres wide. The larger veins are more persistent, reaching over 200 metres in length, whereas smaller veins are discontinuous and lenticular. Some veins are slightly disrupted or offset by younger faults.

The mineralization in this belt is intermittent but can be assigned to three main areas (Geology, Exploration and Mining in British Columbia 1971). The 428 South occurrence is towards the southern end of the belt (the other areas are covered by the 428 North and 428 Central occurrences, MINFILE 094K 015 and 030, respectively). Here, it has a length of about 1000 metres. The quartz-carbonate (ankerite) veins in the zone are generally sporadically and weakly mineralized with irregular masses, lenses or disseminations of chalcopyrite. Disseminated pyrite occurs in some veins, and a minor amount of galena in one locality. The strongest mineralization appears to be associated with the most abundant inclusions of wall-rock, which is generally altered (silicified and sericitized) (Assessment Report 3318). Secondary malachite, azurite and limonite occur on some surfaces in the veins and sedimentary host rocks.

A wide range of assay values has been obtained from chip samples. A representative or average grade would be about 0.5 per cent over 1 metre, although short, high grade sections yield assays such as 3.51 per cent copper over 0.9 metre (Assessment Report 2644, Geology Map), and 2.2 per cent copper over 1.28 metres (Assessment Report 3318, Map 2).

The fault zone hosting the 428 mineral occurrences is probably the same as that hosting the Book 6 (MINFILE 094K 019) and Book 9-10 or PJ Pelletier (MINFILE 094K 052) occurrences several kilometres to the south (Geology, Exploration and Mining in British Columbia 1971).

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- EMPR GEM 1970-46; 1971-75, 99
- EMPR EXPL 1982-348
- EMPR ASS RPT *2644, *3318, 10960
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/22

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 056**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOAT, CHODI**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 11 46 N
LONGITUDE: 125 32 58 W
ELEVATION: 1260 Metres

NORTHING: 6453378
EASTING: 350151

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Goat showing near common corner of Chodi 6,8,9, and 10 claims, 7.5 kilometres east-northeast of confluence of Gataga and South Gataga rivers, in Muskwa Ranges (Assessment Report 9540, Plate 7).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: Sphalerite is yellow or pale red-brown, indicating high zinc/iron ratio.

ASSOCIATED: Pyrite
COMMENTS: Pyrite is dominant sulphide.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated Massive Podiform
CLASSIFICATION: Hydrothermal Replacement
SHAPE: Tabular
DIMENSION: 10 Metres STRIKE/DIP: 290/80S TREND/PLUNGE:
COMMENTS: Local attitude of bedding, and thickness of mineralized strata.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	
Cambrian	Atan	Undefined Formation	

LITHOLOGY: Dolomite
Dolomitic Breccia
Quartz Sandstone
Shale
Slaty Argillite
Limestone

HOSTROCK COMMENTS: Age of host rocks uncertain. Could be Aida Formation of the Helikian Muskwa Assemblage, or Cambrian Atan Group.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated on western edge of northwest-trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

The Goat lead-zinc showing is situated near the common corner of the Chodi 6,8,9 and 10 claims, 7.5 kilometres east-northeast of the confluence of the Gataga and South Gataga rivers, in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 9540, Plate 7).

The occurrence is on the western edge of the Muskwa Anticlinorium, a major regional structure characterized by thrust faulting and moderate folding. Exposed in the structure are Middle Proterozoic clastic and carbonate rocks of the Helikian Muskwa Assemblage, and unconformably overlying Cambrian and younger Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1343A).

Regional geological mapping would place the Goat showing within the Gataga Formation of the Muskwa Assemblage, which is dominated by carbonaceous mudstone and siltstone (Geological Survey of Canada Map 1343A, Memoir 373). Property mapping, however, indicates that this and nearby showings (the Gut and Red occurrences, MINFILE 094K 016 and 028, respectively) occur near the contact between a Cambrian dolostone unit and an overlying unit of quartz sandstone, shale and argillite, and limestone (probably all Atan Group) (Assessment Report

CAPSULE GEOLOGY

9540). Given the regional setting, though, this succession is perhaps more compatible with the contact between the Gataga Formation and dolomitic rocks of the underlying Aida Formation; this suggestion is tentative. Stromatolites and cryptalgal laminae are reported from the dolostone. The strata are gently to moderately folded, and strike about 320 degrees and dip 35 degrees southwest. Argillaceous rocks are well cleaved.

Mineralization is generally confined to the uppermost 10 metres of the dolostone and dolomitic breccia unit, which locally strikes 290 degrees and dips 80 degrees south (Assessment Report 9540). It consists of pyrite, sphalerite and galena. Fine-grained pyrite occurs in massive lenses up to 20 centimetres thick, and in vertical stockwork zones. Minor sphalerite, usually yellow or pale red-brown (indicating a high zinc/iron ratio), occurs as disseminated grains and small lenses. Galena occurs as disseminated grains and in coarse-grained veinlets. Disseminated pyrite and very rare sphalerite are also present in the basal 15 metres of the overlying sandstone. Soils are very anomalous in the area, including values such as 0.32 per cent zinc and 0.18 per cent lead (Assessment Report 9540, Plate 11).

From the textures and the association of the sulphides with recrystallization in the dolostone, it has been proposed that the mineralization is a carbonate-hosted, replacement-type massive sulphide deposit (Assessment Report 9540).

BIBLIOGRAPHY

- EMPR EXPL 1981-59
- EMPR ASS RPT *9540
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1994/11/29
DATE REVISED: 1994/11/30

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 057**

NATIONAL MINERAL INVENTORY: 94K/12 Cu 2

NAME(S): **ANN 18, NEIL VEIN, RAM CREEK,
BOB 3-4, MAD, RIM,
STR, GEO, REX**

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6492351
EASTING: 351871

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094K12E
BC MAP:
LATITUDE: 58 32 47 N
LONGITUDE: 125 32 43 W
ELEVATION: 2050 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Trench 4 in Ann 18 claim, 7 kilometres south of Yedhe Creek, 10 kilometres east of Toad River in the Muskwa Ranges (Assessment Report 3420, Map 14).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Galena
COMMENTS: Galena is rare.
ASSOCIATED: Quartz Ankerite Pyrite
ALTERATION: Malachite Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Podiform
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 1100 x 1 Metres STRIKE/DIP: 045/90 TREND/PLUNGE:
COMMENTS: Length of mineralized zone and typical thickness of individual veins.
General attitude of shear zone hosting mineralized veins.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Calcareous Dolomitic Mudstone
Calcareous Dolomitic Slate
Silty Mudstone
Dolomite
Limestone
Quartzite
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1971
SAMPLE TYPE: Chip
COMMODITY: Copper GRADE: 2.7900 Per cent
COMMENTS: From Trench 4, taken over 0.9 metre.
REFERENCE: Assessment Report 3420, Map 6.

CAPSULE GEOLOGY

This copper prospect is situated in the Ann 18 claim, 7 kilometres south of Yedhe Creek, 10 kilometres east of Toad River, in the Muskwa Ranges in the Northern Rocky Mountains (Assessment Report 3420, Map 14).
The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate

CAPSULE GEOLOGY

folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

The property is underlain mainly by the Aida Formation of the Muskwa Assemblage (Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). In this area, this unit comprises calcareous and dolomitic mudstone and slate, silty mudstone, dolostone, limestone and minor quartzite (Assessment Report 3420; Property File - Adamson, R.S., 1971). Bedding strikes northwest and dips moderately southwest. Locally the rocks are folded, sheared and faulted, and are intruded by several northeast-striking diabase dykes.

A prominent shear zone passes through the area, striking about 045 degrees. It is approximately 30 metres wide and has been traced for 1.1 kilometres horizontally, and 425 metres vertically. Coincident with the shear zone is a large diabase dyke, forming a resistant spur. It dips steeply and is between 2 and 12 metres thick. Its contacts are sheared and altered, as is the adjacent slaty mudstone wall rock. The dyke and the shear zone are important as they host a discontinuous series of mineralized quartz-carbonate veins, occurring at or close to the dyke's contacts in the shear zone. The constituent veins have the same general orientation, but may vary in attitude on the local scale. The veins range in thickness from a few centimetres to 2.75 metres; most are under 1 metre thick. They may have originally been a single vein, known as the Neil vein, which has been disrupted by shearing into smaller lenses. The age relationship between the dyke's intrusion and the veining is uncertain; at least some shearing post-dates both.

The veins are composed of quartz and ankerite, and may have inclusions of wall rock. Chalcopyrite is sporadic and occurs in aggregates and disseminations in variable amounts, along with very minor bornite and pyrite. Secondary malachite and azurite are common. Very locally, there are small blebs and stringers of galena.

This occurrence is centred on the vein in Trench 4, towards the western end of its exposure, immediately west of the Bob group of claims (Assessment Report 3420, Map 14). (A related occurrence, the Bob 3-4 prospect (094K 040), is towards the eastern end of the vein.) Here, the vein is on the southeast side of the dyke. The best chip sample from Trench 4 assayed 2.79 per cent copper over 0.9 metre (Assessment Report 3420, Map 6).

In 1972, seven holes were diamond drilled on the Ann 17 and 18 claims, totalling 681 metres (Geology, Exploration and Mining in British Columbia 1972). There was renewed interest in the property in 1992 (George Cross News Letter, Number 87, May 5).

BIBLIOGRAPHY

- EMPR GEM 1970-42; *1971-78; 1972-492
EMPR ASS RPT *3420
EMPR PF (*Adamson, R.S. (1971): Extracts from Summary Report on the Ram Creek Property; full report in Property File under 094K 040)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
GCNL #87 (May 5), 1992
Vail, J.R. (1957): Geology of the Racing River area, British Columbia; unpublished M.Sc. thesis, University of British Columbia.
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/21

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 058**

NATIONAL MINERAL INVENTORY: 94K/7,8 Pb 1

NAME(S): **DODO D-1**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K10E 094K07E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 30 23 N
LONGITUDE: 124 31 04 W
ELEVATION: 1582 Metres

NORTHING: 6486089
EASTING: 411560

LOCATION ACCURACY: Within 500M

COMMENTS: Located on showing D-1 in Dodo claim group, 4.5 kilometres north of Mount Mary Henry in the Muskwa Ranges, 17.5 kilometres south-southeast of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 1).

COMMODITIES: Barite Lead

MINERALS

SIGNIFICANT: Barite Galena

COMMENTS: Minor galena.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform
CLASSIFICATION: Replacement Industrial Min.
TYPE: E10 Carbonate-hosted barite

SHAPE: Bladed

DIMENSION: 120 x 1 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: Barite forms lenticular or podiform bodies concordant with host strata which strike north-northwest and dip steeply east. Approximate strike length of baritic zone; thickness is up to 10 centimetres.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Bedded Fine Grained Limestone
Dolomite

HOSTROCK COMMENTS: Mineralization occurs 300 metres stratigraphically above contact with Middle Devonian Stone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

COMMENTS: One of several MINFILE showings in narrow belt of Devonian carbonates.

CAPSULE GEOLOGY

The Dodo D-1 is an occurrence of minor barite-lead mineralization, 4.5 kilometres north of Mount Mary Henry on the eastern edge of the mountainous Muskwa Ranges of the Northern Rocky Mountains, 17.5 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 1).

The Dodo D-1 is one of a number of similar MINFILE occurrences lying along a narrow, north-northwest trending belt of mainly Devonian sedimentary rocks. The rocks in this 50-kilometres long, 3-kilometres wide belt are bounded to the west by a steeply-west dipping reverse fault which juxtaposes mostly Middle Proterozoic and Lower Paleozoic rocks. To the east, the belt is flanked by moderately folded, mainly Mesozoic rocks forming the more subdued, Rocky Mountain Foothills. All these rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

The Devonian rocks in this belt generally dip steeply east-northeastwards. The most important units are the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Map 1343A, Memoir 373; Assessment Report 4300). The Stone Formation consists of pale grey, fine-grained, thick-bedded dolostone, dolomitic breccia and dolomitic quartz sandstone. The overlying Dunedin Formation comprises grey, well-bedded, fine-grained limestone, with minor dolostone and siliceous lithologies. Other units in the area include the underlying Silurian to Lower Devonian Nonda, Muncho-McConnell and Wokkash formations, and the overlying Middle Devonian to Mississippian Besa River Formation.

In the early 1970s and again in the early 1980s, the belt was staked to investigate widespread stratabound barite associated with

CAPSULE GEOLOGY

lead-zinc mineralization in the Dunedin, mainly, and Stone formations (Assessment Reports 4300, 9202). The Dodo D-1 is probably the biggest of four small mineral showings in the Dodo claim group (Assessment Report 4300). Like the others, it occurs in thick-bedded limestone of the Dunedin Formation about 300 metres stratigraphically above the contact with the Stone Formation. Here there are pods of barite and galena, 5 to 10 centimetres thick, forming a zone extending approximately 120 metres along strike. The other showings in the vicinity are similar but smaller, occurring along strike to the south-southeast for about 1 kilometre.

BIBLIOGRAPHY

EMPR GEM 1972-491
EMPR ASS RPT *4300
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/26

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 059**

NATIONAL MINERAL INVENTORY: 94K/7,8 Pb 1

NAME(S): **CTV T-5, REP**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K08W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 24 31 N
LONGITUDE: 124 23 51 W
ELEVATION: 1345 Metres

NORTHING: 6475052
EASTING: 418342

LOCATION ACCURACY: Within 500M

COMMENTS: Located on showing T-5 in CTV claim group, 10 kilometres southeast of Mount Mary Henry in the Muskwa Ranges, 31 kilometres south-southeast of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 2).

COMMODITIES: Barite Zinc Lead

MINERALS

SIGNIFICANT: Barite Sphalerite Galena
COMMENTS: Barite is dominant host material. Dark brown sphalerite forms 20 to 30 per cent of host rock locally. Galena is inferred from "Pb" on map.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound
CLASSIFICATION: Replacement Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Tabular
DIMENSION: 45 x 4 Metres STRIKE/DIP: 340/80E
COMMENTS: Maximum length and thickness of barite lens. General attitude given.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Middle Devonian	Undefined Group	Stone	

LITHOLOGY: Bedded Fine Grained Limestone
Fine Grained Dolomite
Dolomitic Sandstone
Barite

HOSTROCK COMMENTS: Mineralization is situated at the contact between the Stone and Dunedin formations. Barite is dominant host rock.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several MINFILE showings in belt of Devonian carbonates.

CAPSULE GEOLOGY

The CTV T-5 is an occurrence of minor barite-zinc mineralization, 10 kilometres southeast of Mount Mary Henry on the eastern edge of the mountainous Muskwa Ranges of the Northern Rocky Mountains, 31 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 2).

The CTV T-5 is one of a number of similar MINFILE occurrences lying along a narrow, north-northwest trending belt of mainly Devonian sedimentary rocks. The rocks in this 50-kilometres long, 3-kilometres wide belt are bounded to the west by a steeply west-dipping reverse fault which juxtaposes mostly Middle Proterozoic and Lower Paleozoic rocks. To the east, the belt is flanked by moderately folded, mainly Mesozoic rocks forming the more subdued, Rocky Mountain Foothills. All these rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

The Devonian rocks in this belt generally dip steeply eastward. The most important units are the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Map 1343A, Memoir 373; Assessment Report 4300). The Stone Formation consists of pale grey, fine-grained, thick-bedded dolostone, dolomitic breccia and dolomitic quartz sandstone. The Dunedin Formation comprises grey, well-bedded, fine-grained limestone, with minor dolostone and siliceous lithologies. Other units in the area include the underlying Silurian to Lower Devonian Nonda, Muncho-McConnell and Wokkpash formations, and the overlying Middle Devonian to Mississippian Besa River Formation.

In the early 1970s and again in the early 1980s, the belt was

CAPSULE GEOLOGY

staked to investigate widespread stratabound barite associated with lead-zinc mineralization in the Dunedin and, very locally, Stone formations (Assessment Reports 4300, 9202). The CTV T-5 actually occurs at the contact between these units, where a lens of barite measuring 4.5 metres in thickness and 30 to 45 metres along strike, contains patches of fine-grained, dark brown sphalerite (Assessment Report 4300). The sphalerite forms up to 20 to 30 per cent of the rock in these zones. Galena is apparently associated (shown as "Pb" on Map 2, Assessment Report 4300).

BIBLIOGRAPHY

EMPR GEM 1972-491
EMPR ASS RPT *4300, 9202
GSC BULL 186
GSC MEM 373
GSC MAP 1343A, 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/26

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 060**

NATIONAL MINERAL INVENTORY: 94K/7,8 Pb 1

NAME(S): **CTV T-7, REP**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K08W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 23 44 N
LONGITUDE: 124 22 51 W
ELEVATION: 1480 Metres

NORTHING: 6473578
EASTING: 419286

LOCATION ACCURACY: Within 500M

COMMENTS: Located on showing T-7 in CTV claim group, 20 kilometres north of Tuchodi Lakes, 33 kilometres south-southeast of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 2).

COMMODITIES: Barite Lead Zinc Fluorite

MINERALS

SIGNIFICANT: Barite Galena Sphalerite

ASSOCIATED: Fluorite

COMMENTS: Fluorite is minor.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform Disseminated
CLASSIFICATION: Industrial Min. Replacement
TYPE: E10 Carbonate-hosted barite
SHAPE: Bladed
DIMENSION: 6 x 1 Metres STRIKE/DIP: 350/85E

TREND/PLUNGE:

COMMENTS: Strike length of barite lens, and maximum thickness (5 centimetres) of associated bands of disseminated sulphides. Local bedding attitude given.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Undefined Group Dunedin

LITHOLOGY: Bedded Fine Grained Limestone
Dolomite
Barite

HOSTROCK COMMENTS: Mineralization occurs approximately 120 metres above contact with Stone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several MINFILE showings in narrow belt of Devonian carbonates.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Grab
COMMODITY GRADE
Zinc 5.0200 Per cent

COMMENTS: Better of two grab samples taken immediately north of CTV T-7 showing, not certainly from bedrock.

REFERENCE: Assessment Report 9202, page 11.

CAPSULE GEOLOGY

The CTV T-7 is an occurrence of minor barite-lead-zinc mineralization, on the edge of the mountainous Muskwa Ranges of the Northern Rocky Mountains, 20 kilometres north of the Tuchodi Lakes, 33 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 2).
The CTV T-7 is one of a number of similar MINFILE occurrences lying along a narrow, north-northwest trending belt of mainly Devonian sedimentary rocks. The rocks in this 50-kilometres long, 3-kilometres wide belt are bounded to the west by a steeply west-dipping reverse fault which juxtaposes mostly Middle Proterozoic and Lower Paleozoic rocks. To the east, the belt is flanked by moderately folded, mainly Mesozoic rocks forming the more subdued, Rocky Mountain Foothills. All these rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

CAPSULE GEOLOGY

The Devonian rocks in this belt generally dip steeply east-northeastwards. The most important units are the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Map 1343A, Memoir 373; Assessment Report 4300). The Stone Formation consists of pale grey, fine-grained, thick-bedded dolostone, dolomitic breccia and dolomitic quartz sandstone. The overlying Dunedin Formation comprises grey, well-bedded, fine-grained limestone, with minor dolostone and siliceous lithologies. Other units in the area include the underlying Silurian to Lower Devonian Nonda, Muncho-McConnell and Wokkash formations, and the overlying Middle Devonian to Mississippian Besa River Formation.

In the early 1970s and again in the early 1980s, the belt was staked to investigate widespread stratabound barite associated with lead-zinc mineralization in the Stone and, mainly, Dunedin formations (Assessment Reports 4300, 9202). The CTV T-7 showing is associated with a pod or lens of banded barite in Dunedin Formation limestone, approximately 120 metres stratigraphically above the contact with the Stone Formation. The barite lens is 30 to 60 centimetres thick and extends for 6 metres along strike (about 350 degrees). Adjacent to it are 2.5 to 5-centimetres thick bands of disseminated galena and sphalerite, associated with minor fluorite.

The later work consisted of further geochemical sampling of the area (Assessment Report 9202). Two grab samples were taken on a creek a few hundred metres immediately north of the CTV T-7 showing (then part of the Rep claim group), although it is not clear if they were bedrock samples. One assayed 5.02 per cent zinc and the other 0.23 per cent zinc (Assessment Report 9202, page 11).

BIBLIOGRAPHY

EMPR GEM 1972-491
EMPR ASS RPT *4300, 9202
EMPR OF 1992-16, p. 75
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/27

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 061**

NATIONAL MINERAL INVENTORY: 94K/7,8 Pb 1

NAME(S): **CTV T-10, REP**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K08W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 23 04 N
LONGITUDE: 124 22 15 W
ELEVATION: 1830 Metres

NORTHING: 6472329
EASTING: 419845

LOCATION ACCURACY: Within 500M

COMMENTS: Located on showing T-10 on CTV claim group, 18 kilometres north of Tuchodi Lakes, 33.5 kilometres south-southeast of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 2).

COMMODITIES: Barite Zinc Lead

MINERALS

SIGNIFICANT: Barite Sphalerite Galena
COMMENTS: Minor galena inferred from lead assay. Sphalerite was described as "muddy".

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive Podiform
CLASSIFICATION: Replacement Industrial Min.
TYPE: E10 Carbonate-hosted barite
DIMENSION: Metres STRIKE/DIP: 340/70E TREND/PLUNGE:
COMMENTS: Massive sphalerite forms a band 2.5 centimetres thick. Local bedding attitude given.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Undefined Group Dunedin

LITHOLOGY: Bedded Fine Grained Limestone
Dolomite
Barite

HOSTROCK COMMENTS: Mineralization occurs a few metres above contact with Middle Devonian Stone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several MINFILE showings in narrow belt of Devonian carbonates.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1973
SAMPLE TYPE: Grab
COMMODITY GRADE
Lead 0.1000 Per cent
Zinc 17.2000 Per cent

COMMENTS: Assay of sample of massive sphalerite.
REFERENCE: Assessment Report 4300, page 8.

CAPSULE GEOLOGY

The CTV T-10 is an occurrence of minor barite-lead-zinc mineralization on the edge of the mountainous Muskwa Ranges of the Northern Rocky Mountains, 18 kilometres north of the Tuchodi Lakes, 33.5 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 2).

The CTV T-10 is one of a number of similar MINFILE occurrences lying along a narrow, north-northwest trending belt of mainly Devonian sedimentary rocks. The rocks in this 50-kilometres long, 3-kilometres wide belt are bounded to the west by a steeply west-dipping reverse fault which juxtaposes mostly Middle Proterozoic and Lower Paleozoic rocks. To the east, the belt is flanked by moderately folded, mainly Mesozoic rocks forming the more subdued, Rocky Mountain Foothills. All these rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

The Devonian rocks in this belt generally dip steeply eastward. The most important units are the Middle Devonian Stone and Dunedin

CAPSULE GEOLOGY

formations (Geological Survey of Canada Map 1343A, Memoir 373; Assessment Report 4300). The Stone Formation consists of pale grey, fine-grained, thick-bedded dolostone, dolomitic breccia and dolomitic quartz sandstone. The Dunedin Formation comprises grey, well-bedded, fine-grained limestone, with minor dolostone and siliceous lithologies. Other units in the area include the underlying Silurian to Lower Devonian Nonda, Muncho-McConnell and Wokkpash formations, and the overlying Middle Devonian to Mississippian Besa River Formation.

In the early 1970s and again in the early 1980s, the belt was staked to investigate widespread stratabound barite associated with lead-zinc mineralization in the Dunedin, mainly, and Stone formations (Assessment Reports 4300, 9202). The CTV T-10 showing consists of a thin, 2.5-centimetres thick band of massive sphalerite, adjacent to a pod of barite in Dunedin Formation limestone a few metres above the contact with the Stone Formation. The sphalerite was described as "muddy" (Assessment Report 4300, page 8). A sample of this material assayed 0.1 per cent lead and 17.2 per cent zinc (Assessment Report 4300). The mineralization does not extend for a significant distance.

BIBLIOGRAPHY

EMPR GEM 1972-491
EMPR ASS RPT *4300, 9202
EMPR OF 1992-16, p. 75
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/28

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 062**

NATIONAL MINERAL INVENTORY: 94K/7,8 Pb 1

NAME(S): **HOPE T-14**, CTV T-14, REP

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K08W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 19 56 N
LONGITUDE: 124 20 12 W
ELEVATION: 1620 Metres

NORTHING: 6466476
EASTING: 421727

LOCATION ACCURACY: Within 500M

COMMENTS: Located on showing T-14 on Hope or CTV claim group, 11 kilometres north of Tuchodi Lakes, 40 kilometres south-southeast of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 3).

COMMODITIES: Barite Lead

MINERALS

SIGNIFICANT: Barite Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform
CLASSIFICATION: Replacement Industrial Min.
TYPE: E10 Carbonate-hosted barite
DIMENSION: Metres

STRIKE/DIP: 325/50E

TREND/PLUNGE:

COMMENTS: Local bedding attitude given.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Devonian

GROUP

Undefined Group

FORMATION

Dunedin

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Fractured Bedded Fine Grained Limestone
Dolomite
Barite

HOSTROCK COMMENTS: Mineralization confined to 30 metres immediately above contact with Middle Devonian Stone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: One of several MINFILE showings in narrow belt of Devonian carbonates.

CAPSULE GEOLOGY

The Hope T-14 (formerly CTV T-14) is an occurrence of minor barite-lead mineralization on the edge of the mountainous Muskwa Ranges of the Northern Rocky Mountains, 11 kilometres north of the Tuchodi Lakes, 40 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 3).

The Hope T-14 is one of a number of similar MINFILE occurrences lying along a narrow, north-northwest trending belt of mainly Devonian sedimentary rocks. The rocks in this 50-kilometres long, 3-kilometres wide belt are bounded to the west by a steeply west-dipping reverse fault which juxtaposes mostly Middle Proterozoic and Lower Paleozoic rocks. To the east, the belt is flanked by moderately folded, mainly Mesozoic rocks forming the more subdued, Rocky Mountain Foothills. All these rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

The Devonian rocks in this belt generally dip steeply eastward. The most important units are the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Map 1343A, Memoir 373; Assessment Report 4300). The Stone Formation consists of pale grey, fine-grained, thick-bedded dolostone, dolomitic breccia and dolomitic quartz sandstone. The Dunedin Formation comprises grey, well-bedded, fine-grained limestone, with minor dolostone and siliceous lithologies. Other units in the area include the underlying Silurian to Lower Devonian Nonda, Muncho-McConnell and Wokkpash formations, and the overlying Middle Devonian to Mississippian Besa River Formation.

In the early 1970s and again in the early 1980s, the belt was staked to investigate widespread stratabound barite associated with lead-zinc mineralization in the Stone and, mainly, Dunedin formations (Assessment Reports 4300, 9202). The Hope T-14 showing lies in intensely fractured limestone of the lower Dunedin Formation. Mineralization is confined to an interval within about 30 metres of

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CAPSULE GEOLOGY

the contact with the Stone Formation. It consists of numerous pods or lenses of barite with galena.

BIBLIOGRAPHY

EMPR GEM 1972-491
EMPR ASS RPT *4300, 9202
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/28

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

mineralization on the edge of the mountainous Muskwa Ranges of the Northern Rocky Mountains, 10 kilometres north of the Tuchodi Lakes, 42 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 3).

The Hope H-3 is one of a number of similar MINFILE occurrences lying along a narrow, north-northwest trending belt of mainly Devonian sedimentary rocks. The rocks in this 50-kilometres long, 3-kilometres wide belt are bounded to the west by a steeply west-dipping reverse fault which juxtaposes mostly Middle Proterozoic and Lower Paleozoic rocks. To the east, the belt is flanked by moderately folded, mainly Mesozoic rocks forming the more subdued, Rocky Mountain Foothills. All these rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

The Devonian rocks in this belt generally dip steeply eastward. The most important units are the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Map 1343A, Memoir 373; Assessment Report 4300). The Stone Formation consists of pale grey, fine-grained, thick-bedded dolostone, dolomitic breccia and dolomitic quartz sandstone. The Dunedin Formation comprises grey, well-bedded, fine-grained limestone, with minor dolostone and siliceous lithologies. Other units in the area include the underlying Silurian to Lower Devonian Nonda, Muncho-McConnell and Wokkpash formations, and the overlying Middle Devonian to Mississippian Besa River Formation.

In the early 1970s and again in the early 1980s, the belt was staked to investigate widespread stratabound barite associated with lead-zinc mineralization in the Dunedin and, locally, Stone formations (Assessment Reports 4300, 9202). The Hope H-3 showing lies right at the contact between these units. Here, the Dunedin Formation consists of pale to dark grey calcarenite and minor limestone (Assessment Report 4300). The Stone Formation is mainly dolomitic breccia; the matrix, about 10 per cent, is a mixture of calcite and barite.

Visible mineralization is confined to the Dunedin Formation, and takes a variety of forms. Minor, pale green sphalerite associated with pyrobitumen occurs in lenticular beds of fetid limestone up to 15 centimetres thick and about 10 metres along strike. A grab sample of this material assayed 4.51 per cent zinc and 0.24 per cent lead (Assessment Report 4300). In addition, there are metre-scale patches or discordant stringer zones of barite, calcite and fluorite, locally associated with marcasite and lenses of semi-massive red sphalerite up to 30 centimetres long and 10 centimetres thick. One select grab sample of the latter assayed 26.7 per cent zinc and 0.2 per cent lead, and another assayed 13.44 per cent zinc (Assessment Report 4300). There are also numerous irregular barite-fluorite veinlets with local red sphalerite and galena.

A "high zinc zone", about 12 metres thick, was identified by detailed chip sampling about 15 metres above the Stone-Dunedin contact (Assessment Report 4300). However, mineralization is generally discontinuous.

BIBLIOGRAPHY

EMPR GEM 1972-491
EMPR ASS RPT *4300, 9202
EMPR OF 1992-16, p. 75
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/28

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 064**

NATIONAL MINERAL INVENTORY: 94K/7,8 Pb 1

NAME(S): **CBC B-2, REP**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K08W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 17 26 N
LONGITUDE: 124 16 43 W
ELEVATION: 1494 Metres

NORTHING: 6461771
EASTING: 425038

LOCATION ACCURACY: Within 500M

COMMENTS: Located on showing B-2 on CBC claim group, 8 kilometres northeast of Tuchodi Lakes, 45 kilometres south-southeast of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 3).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive Podiform
CLASSIFICATION: Replacement Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Tabular
DIMENSION: 30 x 6 x 6 Metres STRIKE/DIP: 330/80E TREND/PLUNGE:
COMMENTS: Dimensions of barite lens, and local bedding attitude.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Bedded Fine Grained Limestone
Dolomite
Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several MINFILE showings in narrow belt of Devonian carbonates.

CAPSULE GEOLOGY

The CBC B-2 is a minor occurrence of barite on the edge of the mountainous Muskwa Ranges of the Northern Rocky Mountains, 8 kilometres northeast of the Tuchodi Lakes, 45 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 4300, Map 3).

The CBC B-2 is one of a number of similar MINFILE occurrences lying along a narrow, north-northwest trending belt of mainly Devonian sedimentary rocks. The rocks in this 50-kilometres long, 3-kilometres wide belt are bounded to the west by a steeply west-dipping reverse fault which juxtaposes mostly Middle Proterozoic and Lower Paleozoic rocks. To the east, the belt is flanked by moderately folded, mainly Mesozoic rocks forming the more subdued, Rocky Mountain Foothills. All these rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

The Devonian rocks in this belt generally dip steeply eastward. The most important units are the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Map 1343A, Memoir 373; Assessment Report 4300). The Stone Formation consists of pale grey, fine-grained, thick-bedded dolostone, dolomitic breccia and dolomitic quartz sandstone. The Dunedin Formation comprises grey, well-bedded, fine-grained limestone, with minor dolostone and siliceous lithologies. Other units in the area include the underlying Silurian to Lower Devonian Nonda, Muncho-McConnell and Wokkpash formations, and the overlying Middle Devonian to Mississippian Besa River Formation.

In the early 1970s and again in the early 1980s, the belt was staked to investigate widespread stratabound barite associated with lead-zinc mineralization in the Dunedin and, locally, Stone formations (Assessment Reports 4300, 9202). The CBC B-2 showing consists of a pod or lens of barite in thick-bedded Dunedin Formation limestone, which locally dips subvertically northeastwards

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CAPSULE GEOLOGY

(Assessment Report 4300). The barite lens measures 30 metres by 6 metres by 6 metres, and contains some pyrite. Galena was found in derived float but not in place.

BIBLIOGRAPHY

EMPR GEM 1972-491
EMPR ASS RPT *4300, 9202
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/31

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 065**

NATIONAL MINERAL INVENTORY: 94K/1 Pb 1

NAME(S): **DOG**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K01E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 09 05 N
LONGITUDE: 124 10 44 W
ELEVATION: 1372 Metres

NORTHING: 6446171
EASTING: 430613

LOCATION ACCURACY: Within 500M

COMMENTS: Located in approximate centre of Dog claims (Group Number 3) on Dead Dog Creek, 19 kilometres east-northeast of Mount Sylvania, 62 kilometres south-southeast of Summit Lake on the Alaska Highway (Assessment Report 4393, Map 2).

COMMODITIES: Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform
CLASSIFICATION: Unknown
COMMENTS: Host strata strike north-northwest and dip gently.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Brecciated Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Dog is a minor occurrence of lead-zinc mineralization, situated on Dead Dog Creek, 19 kilometres east-northeast of Mount Sylvania in the Muskwa Ranges of the Northern Rocky Mountains, 62 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 4393, Map 2).

The area around the Dog group of claims is underlain mainly by folded and thrust-faulted Devonian sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Map 1713A). The main units, which strike north-northwest, are: dolostone of the Middle Devonian Stone Formation; limestone of the Middle Devonian Dunedin Formation; and black shale of the Middle Devonian to Mississippian Besa River Formation (Geological Survey of Canada Memoir 373, Map 1343A).

The available information concentrates on minor lead and zinc soil anomalies, with few details on the geology (Assessment Reports 4202, 4393; Geology, Exploration and Mining in British Columbia 1972, 1973). Irregular pods of generally low grade sphalerite and galena occur locally in gently-dipping, brecciated limestone of the Dunedin Formation.

BIBLIOGRAPHY

EMPR GEM 1972-490; 1973-477
EMPR ASS RPT 4202, 4393
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/31

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 066**

NATIONAL MINERAL INVENTORY: 094K4 Pb 1

NAME(S): **DRIFTPILE CREEK**, DRIFTPILE, D,
P, G, GOOF,
POOK, HOLE, KNOT,
GNEISS, MARITA, SAINT,
GATAGA, MAIN, EAST,
RIDGE

MINING DIVISION: Liard

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094K04W
BC MAP:
LATITUDE: 58 03 59 N
LONGITUDE: 125 54 35 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M

UTM ZONE: 10 (NAD 83)

NORTHING: 6439801
EASTING: 328360

COMMENTS: Located on diamond drill hole 78-04, main Driftpile Creek showing, 18 kilometres southwest of confluence of Gataga and South Gataga rivers, western edge of Muskwa Ranges (Assessment Report 7658, Figure 4b).

COMMODITIES: Zinc Lead Barite

MINERALS

SIGNIFICANT: Sphalerite Galena Barite
ASSOCIATED: Pyrite Calcite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Upper Devonian

DEPOSIT

CHARACTER: Stratiform Massive Disseminated Podiform
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Folded Faulted
DIMENSION: 2000 x 35 Metres STRIKE/DIP: 325/65W TREND/PLUNGE:
COMMENTS: Strike length of mineralized zones; average thickness of lower or main zone; upper zone may be similar. General attitude of bedding.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Earn Gunsteel

LITHOLOGY: Bedded Barite
Black Carbonaceous Silty Shale
Siliceous Shale
Pyritic Mudstone
Baritic Mudstone
Black Carbonaceous Silty Mudstone
Carbonate
Cherty Argillite
Chert

HOSTROCK COMMENTS: Gunsteel Formation is informal. Upper Devonian age is determined from conodonts.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the Gataga mineral district, in the Kechika Trough.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1993
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Lead 1.0000 Per cent
Zinc 10.0000 Per cent
COMMENTS: Hole 93-56, over 12-metre zone.
REFERENCE: Assessment Report 23109.

INVENTORY

ORE ZONE: MAIN REPORT ON: Y
 CATEGORY: Inferred YEAR: 1994
 QUANTITY: 2440000 Tonnes
 COMMODITY _____ GRADE _____
 Lead 3.1000 Per cent
 Zinc 11.9000 Per cent
 COMMENTS: Qualitative estimate of "preliminary resources" in lower mineralized unit of 'main' zone.
 REFERENCE: Fieldwork 1994, page 263.

ORE ZONE: TOTAL REPORT ON: Y
 CATEGORY: Indicated YEAR: 1979
 QUANTITY: 18145000 Tonnes
 COMMODITY _____ GRADE _____
 Lead 2.3800 Per cent
 COMMENTS: Reserves are in eleven areas. Actual grade quoted is 2.38 per cent combined lead-zinc.
 REFERENCE: Canadian Mines Handbook 1980-1981, page 280.

CAPSULE GEOLOGY

The Driftpile Creek developed prospect is based on stratiform barite-lead-zinc mineralization, and is situated near the headwaters of Driftpile Creek near the western edge of the Muskwa Ranges, about 22 kilometres northeast of the Northern Rocky Mountain Trench (Assessment Report 7658).

The deposit is in the Gataga mineral district, in a belt of Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, the southeastern arm of the Selwyn Basin (Exploration and Mining Geology, Volume 1, page 1). These rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Gataga mineral deposits are characterized by stratiform sedimentary exhalative barite-sulphide mineralization, which occurs at certain Ordovician, Silurian and Devonian stratigraphic horizons. The last, represented by the Driftpile Creek deposit among others, are the most economically significant. They are believed to have formed during sedimentation, from metal-enriched brines released into fault-controlled, starved sub-basins which developed during rifting of the ancient continental margin.

The Driftpile mineralization was discovered in 1973 following a regional geochemical reconnaissance survey done in 1970 (Assessment Report 5359). A number of limonitic gossans, ferricrete and 'kill zones' are present on the property but unaltered mineralization is uncommon on the surface, so subsequent exploration has concentrated on detailed geological mapping and soil sampling, and close to twenty thousand metres of diamond drilling.

The area around the Driftpile Creek deposit is underlain mainly by the Middle to Upper Devonian Gunsteel Formation (informal name) of the Devonian-Mississippian Earn Group (Geological Survey of Canada Memoir 373, Map 1343A). This unit is preserved in a broad, northwest-trending, tightly-folded synclinorium disrupted by moderately-dipping, northeast-verging thrust faults. Fold axes plunge 10 to 20 degrees to the northwest. Bedding, cleavage and fold axial planes generally strike about 325 degrees and dip moderately to steeply southwest, though there may be northeastward dips due to the folding. To the southwest of the immediate area, rocks of the underlying Ordovician to Lower Devonian Road River Group are exposed in the hanging-wall of the Mount Waldemar thrust fault (informal name).

Mineralization is restricted to the Gunsteel Formation (the same unit that hosts lead-zinc-silver mineralization at the Stronsay or Cirque deposit, 80 kilometres to the southeast). Conodonts extracted from carbonate rocks at Driftpile Creek indicate that the age of the mineralization is mid-Fammenian (Late Devonian) (Insley 1990).

The Gunsteel Formation mostly comprises blue-grey weathering, carbonaceous black shale and silty mudstone, cherty argillite and radiolarian chert. Within this dominantly mudstone-shale stratigraphy are a number of horizons of siliceous shale or cherty argillite which are enriched with barite and/or pyrite. Barite is in the form of nodules, disseminations, intercalated thin laminae, or massive, centimetre-scale beds. Pyrite is generally present as laminations in mudstone, or may be associated with barite, or with carbonate concretions.

Although their stratigraphic relationships are uncertain because of the structural complexity, at least two different sulphide-rich zones have been distinguished by detailed mapping and diamond

CAPSULE GEOLOGY

drilling (Assessment Report 23109; Insley (1990); Fieldwork 1994). The lower or 'main' zone is primarily a sulphide-carbonate facies; visible barite is uncommon. The zone consists of 35 to 80 per cent sulphide in a carbonate matrix, separated or 'diluted' by intervals of black graphitic shale or mudstone. Most of the sulphide is fine-grained, finely laminated or framboidal pyrite, associated with irregular bands and concretions of calcite. The pyrite grains may be graded, or show soft-sediment deformation. Sphalerite and galena may be present with the pyrite, but they are particularly well-developed in some places in a layer of fine-grained massive sulphide near the base of the zone, as irregular masses or discrete bands. The estimated true thickness of the 'main' zone is between 20 and 70 metres (Fieldwork 1994); Insley (1990) expressed the thickness in terms of two 3- to 36-metre thick subunits. Overall, it carries 1 to 2 per cent zinc (Assessment Report 23109).

The 'upper' zone, 100 to 200 metres higher in the formation, comprises barite-sulphide mineralization, in siliceous or non-siliceous mudstone with pyritic laminations. Barite occurs in massive beds or laminations, or in nodules. Pyrite is subordinate to barite, but may form massive layers, locally accompanied by strong sphalerite and galena. There are few carbonate concretions here. According to Insley (1990), this 'upper' zone occurs in four 2- to 20-metre thick units.

The best mineralization exposed on the surface on the property is that in trenches 1400 metres north of Driftpile Creek (Assessment Report 7658, Figure 4a). Thin parallel bands of discrete, irregular galena and sphalerite occur in dark grey bedded barite; this is probably the 'upper' zone. The best drill intersection from here (hole 78-07) was 11.7 metres grading 7.45 per cent combined lead-zinc

Drilling in 1993 confirmed that high grade mineralization in the 'main' zone extends down dip for at least 100 metres, although farther south along strike, drilling failed to intersect mineralization, indicating that it weakens in that direction. Previous work has demonstrated that mineralization in the Driftpile Creek area has a strike length of between 2 and 3 kilometres and a surface width of 1.5 kilometres (Assessment Report 7658; Fieldwork 1994). Other favourable zones in the area are known as the Camp, East, North Trench, South, and Canyon zones (Fieldwork 1994). Past diamond drilling assay results are given in Assessment Reports 7149, 7658, 23109 and 23561, among others. In 1993 drilling, the best result came from hole 93-56 which intersected a 12-metre zone grading 10 per cent zinc and 1 per cent lead, including a zone of 6.02 metres grading 12.26 per cent zinc and 1.36 per cent lead (Assessment Report 23109).

In 1980 it was reported that shallow drilling in 11 areas indicate reserves of approximately 18,145,000 tonnes averaging 2.38 per cent combined lead-zinc (Canadian Mines Handbook 1980-81, pages 280-281). A more recent, qualitative and preliminary estimate of the geological resource in the lower mineralized subunit of the 'main zone' is 2.44 million tonnes averaging 11.9 per cent zinc and 3.1 per cent lead, with a cutoff grade of 8 per cent zinc (Fieldwork 1994, page 263).

Twenty-six diamond-drill holes totalling 4817 metres were drilled on the Driftpile Creek property during 1994. The program was undertaken to test areas of known mineralization on the property, other than the Main zone, tested in 1993. A total of five target areas, termed the Camp, South, Ridge, East and Canyon zones, were tested during the 1994 program (Assessment Report 24609).

Drilling on the Camp zone has determined that mineralization is present in the keel of a syncline, trending across a ridge top. The mineralized horizon has been largely eroded, limiting tonnage potential.

Complex, tight to isoclinal folding was intersected in the South zone area. Although thick intercepts of high sulphide (pyrite) mineralization were initially intersected, continued drilling demonstrated that the mineralization thinned and weakened along strike and downdip.

Strong pyritic mineralization with discrete sphalerite/galena laminations was intersected on the Ridge zone. Thrust faulting has displaced the mineralized horizon such that it has been subsequently eroded along strike.

Geological mapping in the Canyon zone indicated potential for a second mineralized horizon at depth. Subsequent drilling confirmed the presence of a single horizon, repeated by thrusting. All mineralization is baritic and distal.

Drilling on the East zone identified a mineralized horizon consisting of barite and sulphide. The horizon was tested in three places over a one kilometre strike length. Several narrow intercepts of high grade were obtained, including; 17.5 per cent zinc over 1

CAPSULE GEOLOGY

metre and 7.93 per cent zinc over 2 metres from hole 94-88, and 10.4 per cent zinc over 1 metre from hole 94-89, 800 metres to the south. Locally, tight to isoclinal folding has thickened the mineralized horizon by up to five times. The horizon has not been tested for 800 metres between sections drilled in 1994, and has not been tested north of the northernmost section drilled in 1994.

BIBLIOGRAPHY

EMPR ASS RPT 5359, 5812, 6666, 6881, 6896, *7149, *7658, 10054, 10055, *23109, 23561, *24609
EMPR EXPL 1975-E171; 1978-E249, E250; 1979-269; 1980-448; 1981-191
EMPR FIELDWORK 1979, pp. 55-67; 1982, pp. 154-156; 1985, pp. 343-350; 1986, pp. 193-200; *1994, pp. 261-268, 269-275
EMPR GEM 1974-317
EMPR GEOLOGY 1977-1981, pp. 163-174
EMPR INF CIRC 1993-13
EMPR MAP 38
EMPR OF 1994-1
EMPR PF (Clippings - George Cross News Letter, Northern Miner; miscellaneous photocopies; Gataga Joint Venture paper (72 pages), Welcome North Mines Ltd. @ 1977 (in 094K 068 file))
EMR MIN BULL MR 223 B.C. 272
EMR MP CORPFILE (Welcome North Mines Ltd.; Aquitaine Company of Canada Ltd.)
GSC MAP 1343A; 1713A
GSC MEM 373
GSC P 88-1E, pp. 1-12; 1995-A
CMH 1980-1981, p. 280
CIM Vol. 75, April 1982, pp. 66-78, 99-113
EMG *1992, pp. 1-20
GCNL July 5, 1977; Oct. 12, 1978; Sept 18, Nov. 7, 1979; June 19, Aug. 20, 1980; Oct. 8, 1993
N MINER Oct. 18, Nov.15, 1993; Jan. 24, 1994
W MINER May 1979, p. 64; Oct. 1981, p. 22; April 1984
*Insley, M.W. (1990): Sedimentology and Geochemistry of the Driftpile Ba-Fe-Zn-Pb mineralization, Northeastern British Columbia, Canada; unpublished Ph.D. Thesis, University of London
Chevron File
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/13

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 067**

NATIONAL MINERAL INVENTORY:

NAME(S): **DPP NO.2**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 06 12 N
LONGITUDE: 125 51 17 W
ELEVATION: 1900 Metres

NORTHING: 6443774
EASTING: 331777

LOCATION ACCURACY: Within 500M

COMMENTS: Located in middle of mineralized outcrops, near centre of DPP No. 2 claim, 13.5 kilometres southwest of confluence of Gataga and South Gataga rivers in Muskwa Ranges (Assessment Report 7290, Figure 9).

COMMODITIES: Zinc Lead Copper Barite

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite

COMMENTS: Occur in calcitic fracture-fillings.

ASSOCIATED: Calcite Barite

COMMENTS: Barite is not associated with mineralization but is present in overlying rock unit.

ALTERATION: Azurite Malachite

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound Breccia

CLASSIFICATION: Hydrothermal Epigenetic

SHAPE: Irregular

DIMENSION: 1500 Metres STRIKE/DIP: 320/75W

TREND/PLUNGE:

COMMENTS: Strike length of discontinuous showings. General orientation of host rock.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian	Atan	Undefined Formation	
Cambrian-Ordovician	Kechika	Undefined Formation	

LITHOLOGY: Massive Limestone
Argillaceous Limestone
Calcareous Shale
Calcareous Slate

HOSTROCK COMMENTS: Mineralization occurs in Atan Group just below contact with Kechika Group.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Situated in Gataga mineral district in Kechika Trough.

CAPSULE GEOLOGY

This occurrence is based on a few small zinc-copper showings in the DPP No.2 claim in the Driftpile Pass area, 13.5 kilometres southwest of the confluence of the Gataga and South Gataga rivers in the Muskwa Ranges of Northern British Columbia (Assessment Report 7290, Figure 9).

The DPP property is in the Gataga mineral district, in a belt of Proterozoic and Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Exploration and Mining Geology, Volume 1, page 1; Geological Survey of Canada Map 1713A). Locally the area is underlain by a steeply-southwest dipping succession consisting of, from northeast to southwest: the Cambrian Atan Group; the Cambro-Ordovician Kechika Group; the Ordovician to Lower Devonian Road River Group; and the Devono-Mississippian Earn Group, represented by the informally-named Gunsteel Formation (Assessment Report 7290; Geological Survey of Canada Memoir 373, Map 1343A). The last unit is host to important stratiform barite-lead-zinc mineralization at the Driftpile Creek deposit immediately to the southwest (MINFILE 094K 066). Similar mineralization may exist in the baritic facies of Gunsteel Formation rocks in the DPP property, as suggested by lead soil anomalies (Assessment Report 7290). However, the DPP No.2 occurrence is based on a different form of mineralization, lower in the stratigraphy,

CAPSULE GEOLOGY

namely zinc and copper mineralization near the top of the Atan Group.

In this area, the Atan Group comprises a lower quartzite unit and an upper unit of massive, blue-grey micritic limestone, forming a ridge of steep cliffs. To the southwest, the overlying Kechika Group apparently consists of orange-brown weathering, dark grey argillaceous limestone and dark grey calcareous shale or slate. These and the younger units are moderately to tightly folded and are cut by steep reverse faults. The strata strike about 320 degrees and dip 75 degrees southwest.

Minor showings of sphalerite, galena, chalcopyrite, azurite and malachite are distributed erratically along the trace of the upper contact of the Atan Group limestone (Assessment Reports 6736, 7290). This occurrence is positioned roughly in the middle of them. The mineralization is localized in calcitic fracture-fillings and in breccia. Well-formed crystals of sphalerite also occur in argillaceous bands in the limestone.

BIBLIOGRAPHY

EMPR EXPL 1977-E218; 1978-E250
EMPR ASS RPT 6736, 6881, *7290
GSC MEM 373
GSC P 88-1E, pp. 1-12
GSC MAP 1343A; 1713A
EMG, 1992, *Volume 1, pp. 1-20
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 068**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAINT**, GATAGA JOINT VENTURE, ROEN,
FLACO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K04W 094L01E
BC MAP:
LATITUDE: 58 07 26 N
LONGITUDE: 125 59 07 W
ELEVATION: 1750 Metres

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6446394
EASTING: 324188

LOCATION ACCURACY: Within 500M
COMMENTS: Located in approximate centre of Saint 3 claim, 19.5 kilometres west-southwest of confluence of Gataga and South Gataga rivers in Muskwa Ranges (Assessment Report 14904, Figure 3).

COMMODITIES: Barite Zinc Lead

MINERALS

SIGNIFICANT: Barite Sphalerite Galena
COMMENTS: Sphalerite and galena are rare.
ASSOCIATED: Pyrite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Devonian

DEPOSIT

CHARACTER: Stratiform Massive Podiform Disseminated
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Folded Faulted
COMMENTS: Prospective stratigraphy outcrops over a wide area. Baritic intervals range from 8 to 45 metres in thickness, strike northwest and dip moderately to steeply southwest.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Earn	Gunsteel	

LITHOLOGY: Bedded Barite
Carbonaceous Cherty Argillite
Siliceous Shale
Bedded Chert
Mudstone
Siltstone
Coarse Grained Clastic

HOSTROCK COMMENTS: Gunsteel Formation (informal name) and Earn Group form part of the Kechika Trough.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the Kechika Trough.

CAPSULE GEOLOGY

This occurrence is located in the approximate centre of the Saint 3 claim, 19.5 kilometres west-southwest of the confluence of the Gataga and South Gataga rivers in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 14904, Figure 3). The occurrence is in the Gataga mineral district, in a belt of Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Exploration and Mining Geology, Volume 1, page 1; Geological Survey of Canada Map 1713A). The Gataga mineral deposits are characterized by stratiform sedimentary-exhalative barite-sulphide mineralization, which occurs at certain Ordovician, Silurian and Devonian stratigraphic horizons. The last are the most economically significant and are represented in the area by the important Driftpile Creek developed prospect, 8 kilometres along strike to the southeast of the Saint occurrence. Structurally, the region is deformed into a series of a northwest-trending folds and imbricate thrust faults. Like the Driftpile Creek deposit, the Saint claims are underlain mainly by the Middle to Upper Devonian Gunsteel Formation (informal name) of the Devonian-Mississippian Earn Group (Geological Survey of

CAPSULE GEOLOGY

Canada Memoir 373, Paper 88-1E, page 1; Insley, M.W. (1990) - thesis). This unit comprises bluish-grey weathering carbonaceous cherty argillite, siliceous shale and bedded chert, with subordinate mudstone, siltstone and coarser siliciclastics. Important nodular (around 1 centimetre), laminated or massive lenticular barite intervals occur at a number of horizons (Insley, M.W. (1990) - thesis). Regionally they may host lead-zinc sulphide mineralization, although in the Saint area the barite intervals (between 8 and 45 metres thick) are virtually barren and the only sulphide generally present is disseminated or laminated pyrite, up to 5 per cent by volume (Assessment Report 14904). The rocks are thrust faulted and tightly folded into a series of northeasterly-overtorned anticlines and synclines, and the baritic horizons are repeated on the surface. The strata generally strike northwest and dip moderately to steeply southwest. In the southwest corner of the claim group, a thrust places dolomitic siltstones of the Ordovician to Devonian Road River Group onto the Earn Group.

Limonitic gossaneous zones and ferruginous seeps occur in the property locally, but are not associated with the baritic horizons (Assessment Report 14904). They are geochemically anomalous, especially with respect to zinc (some over 1 per cent). Apart from these, there is no record of bedrock mineralization despite the prospective stratigraphy, except for rare sphalerite and galena in the pyritic barite intervals (Assessment Report 14904). Assessment Report 10508 refers to a mineralized quartz vein just south of the Saint 3 claim but gives no details.

BIBLIOGRAPHY

EMPR ASS RPT 6666, 6881, 7328, 9150, 9396, 10508, 11189, *14904
EMPR EXPL 1978-E251; 1979-329; 1980-448, 449; 1981-312; 1982-348
EMPR PF (Gagata Joint Venture (72 pages), Welcome North Mines Ltd. @ 1977)
GSC MAP 1343A; 1713A
GSC MEM 373
GSC P 88-1E, pp. 1-12
EMG, 1992, *Volume 1, pp. 1-20
*Insley, M.W. (1990): Sedimentology and Geochemistry of the Driftpile Ba-Fe-Zn-Pb mineralization, Northeastern British Columbia, Canada; unpublished Ph.D. thesis, University of London.
Chevron File
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/06

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 069**

NATIONAL MINERAL INVENTORY:

NAME(S): **GRAN**, BY

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K04W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 09 48 N
LONGITUDE: 125 56 00 W
ELEVATION: 1700 Metres

NORTHING: 6450649
EASTING: 327437

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized outcrop in Gran claim, 15.5 kilometres west of confluence of Gataga and South Gataga rivers, in Muskwa Ranges (Assessment Report 6689, Figure 10).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
COMMENTS: Sphalerite crystals are up to 5 millimetres across.
ASSOCIATED: Pyrite
COMMENTS: Host slate is locally pyritic.
ALTERATION: Smithsonite
COMMENTS: Probably formed by oxidation.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound
CLASSIFICATION: Unknown
DIMENSION: 70 x 1 Metres STRIKE/DIP: 320/70W TREND/PLUNGE:
COMMENTS: Strike length and maximum width (0.3 metre) of mineralized zone, and its general attitude.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian-Ordovician	Kechika	Undefined Formation	
Cambrian	Atan	Undefined Formation	

LITHOLOGY: Silty Dolomitic Slate
Black Pyritic Slate
Argillaceous Limestone
Limestone
Limestone Breccia
Quartz Sandstone

HOSTROCK COMMENTS: Mineralization is close to the contact between the Kechika and Atan groups.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the Kechika Trough.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1977
SAMPLE TYPE: Grab
COMMODITY: Zinc 11.4500 Per cent
COMMENTS: Sample from smaller showing, along strike southeast of main showing.
REFERENCE: Assessment Report 6689.

CAPSULE GEOLOGY

This minor zinc showing is situated in the Gran claim, 15.5 kilometres west of the confluence of the Gataga and South Gataga rivers in the Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 6689, Figure 10).

The occurrence is in a belt of Proterozoic through Mississippian basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Exploration and Mining Geology, Volume 1, page 1; Geological Survey of Canada Map 1713A). Structurally, the region is deformed into a series of northwest-trending folds and imbricate thrust faults.

CAPSULE GEOLOGY

The Gran claim is underlain by rocks of the Cambrian Atan Group and the overlying Cambro-Ordovician Kechika Group (Assessment Report 6689; Geological Survey of Canada Memoir 373, Map 1343A). In this area, the lower part of the Atan Group consists of medium- to coarse-grained quartz sandstone, and the upper part comprises massive grey limestone (archeocyathid-bearing, north of the claim) and limestone breccia. These lithologies change abruptly at the Kechika Group contact, replaced by interbedded silty, dolomitic slate; black, non-calcareous and locally pyritic slate; and minor argillaceous limestone. The Kechika Group forms the core of a tight, northeasterly-overtaken syncline, flanked by the Atan Group. Strata generally strike about 320 degrees and dip 70 degrees southwest.

The occurrence is centred on the main showing of mineralization, in the north-centre of the claim. Dark grey slate with numerous calcite and quartz veinlets, near the base of the Kechika Group, contains sphalerite in narrow zones on bedding planes. The sphalerite crystals are 1 to 5 millimetres across, and may be altered to smithsonite. The zone is 10 to 30 centimetres wide and extends along strike for about 70 metres. A smaller showing occurs at the same stratigraphic horizon 800 metres to the southeast, where a sample assayed 11.45 per cent zinc (Assessment Report 6689).

BIBLIOGRAPHY

EMPR EXPL 1977-E219; 1978-E250
EMPR ASS RPT *6689
GSC MEM 373
GSC MAP 1343A; 1713A
EMG, 1992, *Volume 1, pp. 1-20

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/06

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 070**

NATIONAL MINERAL INVENTORY: 94K/11 Cu 9

NAME(S): **GANG**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K11E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 33 49 N
LONGITUDE: 125 04 08 W
ELEVATION: 1070 Metres

NORTHING: 6493316
EASTING: 379649

LOCATION ACCURACY: Within 500M

COMMENTS: Located in approximate centre of Gang claim group, 1 kilometre west of Racing River, 3 kilometres south-southwest of mouth of Wokkpash Creek in Muskwa Ranges (Assessment Report 1042, Figure 2).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Unknown

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

This copper occurrence is provisionally located in the centre of the Gang group of claims, 1 kilometre west of Racing River, 3 kilometres south-southwest of the mouth of Wokkpash Creek, in the Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 1042, Figure 2).

No geological description is available.

BIBLIOGRAPHY

EMPR ASS RPT 1042
EMR MP CORPFILE (Racing River Mines Limited, The Geology of the Racing River area)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/29

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 071**

NATIONAL MINERAL INVENTORY: 94K/1 Cu 1

NAME(S): **DOUG**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K01W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 13 53 N
LONGITUDE: 124 26 59 W
ELEVATION: 975 Metres

NORTHING: 6455388
EASTING: 414866

LOCATION ACCURACY: Within 5 KM

COMMENTS: Precise location of Doug claims not known; placed with several kilometres uncertainty, north of the Tuchodi Lakes (Mineral Development Sector, Corporation Files - National Mineral Inventory).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal
DIMENSION: 70 x 36 Metres
COMMENTS: Strike length and down dip extent of vein.

STRIKE/DIP:

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic	Undefined Group	Henry Creek	

LITHOLOGY: Calcareous Mudstone
Sandstone
Limestone

HOSTROCK COMMENTS: Henry Creek Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the core of the Tuchodi Anticline.

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1969
SAMPLE TYPE: Grab	
COMMODITY: Copper	GRADE: 4.0000 Per cent

COMMENTS: Average of assay samples from 5 trenches, over widths ranging from 2 to 4.5 metres.

REFERENCE: Mineral Develop. Sect.- Corp. Files: Lubicon Petroleum and Mining Ltd.

CAPSULE GEOLOGY

The Doug copper showing is only roughly located, in the Doug group of claims in the Tuchodi Lakes area in the Muskwa Ranges of the Northern Rocky Mountains (Mineral Development Sector, Corporation Files - National Mineral Inventory). It has been provisionally placed north of Tuchodi Lakes, but there is an uncertainty of many kilometres.

The occurrence is in Middle Proterozoic (Helikian) sedimentary rocks of the Muskwa Assemblage in the core of the Tuchodi Anticline, an open fold structure which formed on a ramp of a major northeast-verging thrust in the region (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639, 642). The rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-striking diabase dykes of Proterozoic age are common in the region, and many are associated with copper mineralization.

Based on its provisional location, the showing is hosted in the Henry Creek Formation of the Muskwa Assemblage, which comprises mainly calcareous mudstone, with minor sandstone and limestone (Geological Survey of Canada Memoir 373, Paper 67-68). Very little information on the deposit is available. A vein was traced along strike for 70 metres and down dip (presumably by diamond drilling)

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1450
REPORT: RGEN0100

CAPSULE GEOLOGY

for 36 metres. Assays from 5 trenches, across widths ranging from 2 to 4.5 metres, averaged 4 per cent copper (Mineral Development Sector, Corporation Files - National Mineral Inventory).

BIBLIOGRAPHY

EMR CORPFILE (Mineral Development Sector - Corporation Files:
Lubicon Petroleum and Mining Limited)
GSC MEM 373
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).
N MINER May 8, 1969-15; July 10, 1969-3; Aug. 1969-19
Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/18

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 072**

NATIONAL MINERAL INVENTORY: 94K/12 Cu 2

NAME(S): **RAM CREEK NO.1**, NO.1 VEIN, BOB 3-4,
MAD, RIM, REX,
ANN, GEO, STR,
COPPER KEAYS

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K12E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 32 37 N
LONGITUDE: 125 34 21 W
ELEVATION: 1685 Metres

NORTHING: 6492103
EASTING: 350276

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located approximately, from description, 7.5 kilometres south of
Yedhe Creek, 8.25 kilometres east of Toad River in the Muskwa Ranges
(Geology, Exploration and Mining in British Columbia 1971, page 80;
National Mineral Inventory).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 180 Metres STRIKE/DIP: 360/90
COMMENTS: Length of one mineralized vein. General orientation of veins.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic Proterozoic	Undefined Group	Aida	Unnamed/Unknown Informal

LITHOLOGY: Slate
Dolomite
Diabase Dike
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip
COMMODITY GRADE
Copper 1.5000 Per cent
COMMENTS: Average of chip samples from 3 localities, over an average width of
1.2 metres. Year is uncertain; may be 1971.
REFERENCE: Property File - Adamson, R.S. (1971); National Mineral Inventory.

CAPSULE GEOLOGY

The Ram Creek No.1 copper showing is located only approximately, on the southwest side of a tributary of Toad River, 7.5 kilometres south of Yedhe Creek, 8.25 kilometres east of Toad River, in the Muskwa Ranges in the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia 1971, page 80; National Mineral Inventory).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological

CAPSULE GEOLOGY

Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northeast- to northwest-trending diabase dykes of Proterozoic age are common in the region.

There is little available documentation on the occurrence (Property File - Adamson, R.S., 1971). It was apparently explored in the early 1970s in conjunction with the Bob 3-4 and Ann 18 prospects, 2 kilometres to the east-northeast, described in Assessment Report 3420. At those localities, chalcopryite mineralization occurs in quartz-carbonate veins adjacent to a diabase dyke in a 1.1-kilometre long shear zone.

The Ram Creek No.1 is in a similar setting, but is probably not a continuation of the mineralization referred to above. North-northeast and north-northwest striking diabase dykes intrude interbedded slate and dolostone of the Aida Formation of the Muskwa Assemblage (Geology, Exploration and Mining in British Columbia 1971; Geological Survey of Canada Memoir 373). Bedding strikes northwest and dips moderately southwest. Quartz veins, which trend northerly to northwesterly, occur adjacent to the dykes. One vein can be traced for 180 metres; it appears to pinch out at both ends. In general, the veins are discontinuous and erratically mineralized, and have been disrupted by faulting. Mineralization is in the form of disseminated chalcopryite. Chip samples from three localities averaged approximately 1.5 per cent copper over an average width of 1.2 metres (Property File - Adamson, R.S., 1971; National Mineral

Renewed interest in the property was shown in 1992 (George Cross News Letter, Number 87, May 5).

BIBLIOGRAPHY

- EMPR GEM 1970-42; *1971-78; 1972-492
EMPR ASS RPT 3420
EMPR PF (*Adamson, R.S. (1971): Extracts from Summary Report on Ram Creek Property; full report in Property File under 094K 040)
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
GCNL #87 (May 5), 1992
Vail, J.R. (1957): Geology of the Racing River area, British Columbia; unpublished M.Sc. thesis, University of British Columbia. Chevron File

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/21

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 073**

NATIONAL MINERAL INVENTORY: 94K/11 Cu 5

NAME(S): **RICH**, ALL 3, TED,
ALL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K11W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 32 51 N
LONGITUDE: 125 21 34 W
ELEVATION: 1830 Metres

UTM ZONE: 10 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6492080
EASTING: 362688

COMMENTS: Located in centre of All 3 claim, 1.7 kilometres northwest of Yedhe Mountain in Muskwa Ranges (Geology, Exploration and Mining in British Columbia 1970; 1970 claim map).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Unknown	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Unknown

HOSTROCK COMMENTS: Host rocks may be Middle Proterozoic Tuchodi Formation; Proterozoic diabase dyke; Cambrian Atan Group.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

This occurrence is based on trenching carried out on the All 3 claim, 1.7 kilometres northwest of Yedhe Mountain in the Muskwa Ranges of the Northern Rocky Mountains (Geology, Exploration and Mining in British Columbia 1970).

No geological information is available except that the target was copper mineralization (Geology, Exploration and Mining in British Columbia 1970). From its location, the area is underlain by clastic sedimentary rocks of the Cambrian Atan Group (Geological Survey of Canada Memoir 373, Map 1343A). However, it is possible that the underlying Middle Proterozoic Aida Formation and a Proterozoic dyke actually outcrop in the claim where the work was done. This is reasonable as these rock units tend to host chalcopyrite-bearing quartz-carbonate veins in the region.

BIBLIOGRAPHY

EMPR GEM 1970-43
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/29

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 074**

NATIONAL MINERAL INVENTORY:

NAME(S): **STONE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K10W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 42 28 N
LONGITUDE: 124 45 32 W
ELEVATION: 1615 Metres

NORTHING: 6508850
EASTING: 398100

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located from map symbol, in headwaters of small creek, 4.5 kilometres northeast of Alaska Highway, 8.5 kilometres northwest of Summit Lake (Open File 1992-16, page 39).

COMMODITIES: Barite Fluorite

MINERALS

SIGNIFICANT: Barite Fluorite

COMMENTS: Fluorite is minor.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Limestone
Calcarenite
Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The Stone barite occurrence is situated in the headwaters of a small creek, 4.5 kilometres northeast of the Alaska Highway, 8.5 kilometres northwest of Summit Lake (Open File 1992-16, page 39).

No geological description is available. From its location, the occurrence is hosted in the Middle Devonian Dunedin Formation, not far from the top of the underlying Devonian Stone Formation (Geological Survey of Canada Map 1343A). This unit is composed of grey, well bedded limestone, and minor calcarenite and dolostone (Geological Survey of Canada Memoir 373). Paleozoic rocks in this region are deformed by moderate folds and northeast-verging thrusts. The Dunedin Formation hosts other barite deposits in the area, the closest being the Mile 397 Barite showing, 4 kilometres to the south-southwest.

The only known reference to the showing denotes carbonate-hosted barite with accessory fluorite (Open File 1992-16, pages 39 and 76 (Item 093)).

BIBLIOGRAPHY

EMPR OF *1992-16, pp. 39, 76
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1995/01/16
DATE REVISED: 1995/01/16

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 075**

NATIONAL MINERAL INVENTORY: 94K/2 Pb 1

NAME(S): **A**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K02W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 01 06 N
LONGITUDE: 124 52 58 W
ELEVATION: 2000 Metres

NORTHING: 6432302
EASTING: 388776

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located at approximate centre of A (1-20) claim group, immediately east of northern limit of Kwadacha Wilderness Provincial Park, 23 kilometres southwest of Tuchodi Lakes in Muskwa Ranges (Claim map; Geology, Exploration and Mining in British Columbia 1972).

COMMODITIES: Lead Zinc

MINERALS

SIGNIFICANT: Galena Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
COMMENTS: Nature of mineralization not documented.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Cambrian	Atan	Unnamed/Unknown Formation	
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Dolomite
Conglomerate
Sandstone
Limestone
Argillite
Quartzite

HOSTROCK COMMENTS: Most of locality underlain by Atan Group. Aida Formation forms part of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

The A occurrence is located approximately in the centre of the A 1 to 20 claim group, immediately east of the northern limit of the Kwadacha Wilderness Provincial Park, 23 kilometres southwest of the Tuchodi Lakes, in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Claim map; Geology, Exploration and Mining in British Columbia 1972, page 490).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by thrust faulting and moderate folding. The structure consists of Middle Proterozoic (Helikian) rocks called the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). Northwest-striking diabase and gabbro dykes are common in the region.

Few geological details are available for the A occurrence. From its location, the claim group is underlain mainly by conglomerate, sandstone and minor limestone of the Lower Cambrian Atan Group (Geological Survey of Canada Memoir 373, Map 1343A), although the main reference mentions only dolostone (Geology, Exploration and Mining in British Columbia 1972). To the east and unconformably beneath the Cambrian rocks are argillite and quartzite of the Aida Formation of the Muskwa Assemblage. Regionally, strata strike north-northwest and dip gently to moderately west.

Galena and sphalerite are reported to occur in both of the above units, but the nature of the mineralization is not documented (Geology, Exploration and Mining in British Columbia 1972). In the region generally, lead-zinc mineralization usually occurs in quartz

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CAPSULE GEOLOGY

veins in carbonate rocks.

BIBLIOGRAPHY

EMPR GEM *1972-490
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1994/11/28

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 076**

NATIONAL MINERAL INVENTORY: 94K/6 Cu 2

NAME(S): **JOHN, PINE, L,
M**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K06E 094K06W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 22 34 N
LONGITUDE: 125 14 29 W
ELEVATION: 2100 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6472769
EASTING: 368920

LOCATION ACCURACY: Within 500M

COMMENTS: Located on John 22 claim, 4.5 kilometres west of Churchill Creek, 2.5 kilometres north-northeast of Falaise Mountain in Muskwa Ranges (National Mineral Inventory; Mineral claim map, December 1970).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive Podiform
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
SHAPE: Tabular
DIMENSION: 45 x 3 Metres STRIKE/DIP: 315/90 TREND/PLUNGE:
COMMENTS: Exposed length and combined, average width of the two parallel mineralized veins, and their orientation.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Dolomitic Mudstone
Dolomitic Siltstone
Dolomite
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation forms part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the north-northwest trending Muskwa Anticlinorium.

CAPSULE GEOLOGY

This copper showing is centred on the John 22 claim, 4.5 kilometres west of Churchill Creek, 2.5 kilometres north-northeast of Falaise Mountain in the mountainous Muskwa Ranges of the Northern Rocky Mountains (National Mineral Inventory; Geology, Exploration and Mining in British Columbia 1970; Mineral claim map, December 1970).

The occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by moderate folding and thrust faulting. The structure consists of Middle Proterozoic (Helikian) rocks of the Muskwa Assemblage, as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A).

According to its location, the area around the John and Pine claims is underlain to the east by the Aida Formation of the Muskwa Assemblage, mainly comprising dolomitic mudstone, siltstone and thick-bedded dolostone, and to the west by the unconformably overlying Cambrian Atan Group, consisting of siliciclastics and minor limestone (Geological Survey of Canada Memoir 373). Regionally, the type of copper mineralization represented by this occurrence is restricted to Proterozoic rocks.

The Aida Formation rocks are gently folded about axes trending 015 degrees. Around the mineralization, bedding dips 30 degrees west. The rocks are cut by an irregular system of quartz-carbonate veins which are exposed intermittently for a length of about 45 metres. The system is made up of two parallel veins striking 315 degrees and dipping vertically. The veins are about 3 metres apart,

CAPSULE GEOLOGY

separated by dolostone at the southeast end and by argillites at the northwest end. The more important vein, to the southwest, averages between 1 and 3.5 metres in width and is visually estimated to grade from 1 to 2 per cent copper in the form of disseminations, stringers and massive pods of chalcopyrite (National Mineral Inventory; Geology, Exploration and Mining in British Columbia 1970). The northeastern vein averages 1 to 1.5 metres in width and is estimated to grade from 0.5 to 1 per cent copper (National Mineral Inventory).

BIBLIOGRAPHY

EMPR GEM *1970-45
EMPR ASS RPT 15090
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GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1994/12/16
DATE REVISED: / /

CODED BY: CJR
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 1460
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR EXPL 1978-E249; 1979-329
EMPR ASS RPT 6663, 6881, 7290, *7874
GSC MEM 373
GSC P 88-1E, pp. 1-12
GSC MAP 1343A; 1713A
GCNL Sept. 18, 1979
EMG 1992, *Volume 1, pp. 1-20
Insley, M.W. (1990): Sedimentology and Geochemistry of the
Driftpile Ba-Fe-Zn-Pb mineralization, Northeastern British
Columbia, Canada; unpublished Ph.D. thesis, University of London.
Chevron File
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1994/12/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 078**

NATIONAL MINERAL INVENTORY:

NAME(S): **MACDONALD CREEK, SUMMIT LAKE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K10E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 38 00 N
LONGITUDE: 124 42 41 W
ELEVATION: 1500 Metres

NORTHING: 6500492
EASTING: 400640

LOCATION ACCURACY: Within 5 KM

COMMENTS: Location centered on arbitrary point on north-facing slopes of Mount St. George, immediately east of MacDonald Creek, 2 kilometres southwest of Summit Lake on the Alaska Highway (Unit Ds on Geological Survey of Canada Map 1343A).

COMMODITIES: Dolomite

MINERALS

SIGNIFICANT: Dolomite
ASSOCIATED: Calcite
MINERALIZATION AGE: Devonian

DEPOSIT

CHARACTER: Stratiform Massive Breccia
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: R10 Dolomite
COMMENTS: Unit forms core of open syncline, with axis trending west-northwest.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Undefined Group	Stone	
DATING METHOD:	Fossil		

LITHOLOGY: Dolomite
Dolomitic Evaporite
Dolomitic Breccia
Sandy Dolomite
Limestone

HOSTROCK COMMENTS: Stone Formation is Lower to Middle Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated at nose of northwest-trending and plunging Tuchodi Anticline.

CAPSULE GEOLOGY

The MacDonald Creek occurrence is based on a significant area of dolostone, which may be of interest because of its proximity to the Alaska Highway. The showing is centred on an arbitrary point on the north-facing slopes of Mount St. George, immediately east of MacDonald Creek, 2 kilometres southwest of Summit Lake on the Alaska Highway.

The dolostone belongs to the Lower to Middle Devonian Stone Formation (Geological Survey of Canada Map 1343A). Regionally, this unit is composed of various lithologies including sandy dolostone, and bedded dolostone and limestone (Geological Survey of Canada Memoir 373). In the Summit Lake area it consists of a facies of dolomitic evaporite and dolomitic breccia. These rocks are mostly pale grey and very finely crystalline to aphanitic, with few clastic impurities. Bedding is indistinct, although the evaporitic facies is commonly laminated. Interbeds of very dark grey, medium- to coarse-grained limestone may occur rarely. In this area, the formation is approximately 360 metres thick. Bounding stratigraphic units, namely the Early Devonian Wokkpash Formation and the Middle Devonian Dunedin Formation, are also slightly dolomitic. Below the Wokkpash Formation, the Muncho-McConnell Formation comprises fine-grained dolostone, but it is thinner and outcrops in relatively narrow bands in this area.

Structurally, the Stone Formation in the Summit Lake area lies in the core of a very open syncline with a west-northwest trending axis (Geological Survey of Canada Map 28-1963). The area is at the 'nose' of the northwest-trending and plunging Tuchodi Anticline, and is also disrupted by thrusts. All rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

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BIBLIOGRAPHY

EMPR OF 1992-18
GSC BULL 186
GSC MEM 373
GSC MAP 28-1963; 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/18

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 079**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHISCHA**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K10E 094K07E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 30 13 N
LONGITUDE: 124 35 05 W
ELEVATION: 1278 Metres

NORTHING: 6485870
EASTING: 407652

LOCATION ACCURACY: Within 5 KM

COMMENTS: Covers a broad area in upper section of Tetsa River in Muskwa Ranges, approximately 18 kilometres south-southeast of settlement of Summit Lake on the Alaska Highway (Open File 1987-13, Map, locality M 39).

COMMODITIES: Magnesite

MINERALS

SIGNIFICANT: Magnesite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Stratabound
CLASSIFICATION: Sedimentary Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Proterozoic

GROUP

Undefined Group

FORMATION

Chischa

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dolomite
Quartzite
Siltstone

HOSTROCK COMMENTS: Chischa Formation forms lowest unit of Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in core of the northwest-trending Tuchodi Anticline.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

The general location of the Chischa occurrence is the headwaters of Tetsa River in the Muskwa Ranges of the Northern Rocky Mountains, approximately 18 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Open File 1987-13, Map, locality M 39).

The occurrence is based on the presence of magnesite in the Middle Proterozoic Chischa Formation. This is the lowest unit of the Helikian Muskwa Assemblage, and forms the core of the Tuchodi Anticline, an open, northwest-trending fold which formed on a ramp of a major northeast-verging thrust (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, pages 111, 639, 642). The rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A).

The Chischa Formation outcrops extensively at lower elevations in the upper section of the Tetsa River. The base is not exposed; the known thickness is about 950 metres. The unit comprises pale grey and pastel, very fine grained dolostone, fine-grained orthoquartzite and siltstone (Geological Survey of Canada Memoir 373, Paper 67-68). Sedimentary structures indicate deposition in a shallow water environment.

Dolomitic subunits near the base of the formation are reported to contain magnesite (Open File 1987-13, page 22). These rocks are pink to white, fine to medium grained, and form resistant cliffs and ledges. R.T. Bell of the Geological Survey of Canada has examined both these rocks and Australian magnesite deposits, and considers them remarkably similar (1986: Personal Communication). There is conflicting evidence whether this kind of carbonate-hosted magnesite deposit is of sedimentary or replacement origin (Open File 1987-13, page 7).

There is a vague reference to magnesite in mineral exploration records in the region, but they deal with barite-lead-zinc mineralization in a belt of Devonian carbonate rocks about 15 kilometres to the southeast (Assessment Report 9202, page 12).

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BIBLIOGRAPHY

EMPR ASS RPT 9202
EMPR OF *1987-13
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of
North America, Volume G-2).

DATE CODED: 1986/11/04
DATE REVISED: 1995/01/18

CODED BY: BG
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 080**

NATIONAL MINERAL INVENTORY:

NAME(S): **TETSA RIVER**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K09W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 39 35 N
LONGITUDE: 124 18 08 W
ELEVATION: 884 Metres

NORTHING: 6502896
EASTING: 424450

LOCATION ACCURACY: Within 500M

COMMENTS: Located on outcrop on north side of Alaska Highway, 2 kilometres northeast of confluence of Tetsa and North Tetsa rivers, about 21 kilometres east of Summit Lake (Fieldwork 1987, Figure 3-7-1, sample locality SB87-40; Open File - Phosphate Deposits in British Columbia).

COMMODITIES: Phosphate

MINERALS

SIGNIFICANT: Fluorapatite
ASSOCIATED: Quartz Calcite Feldspar
MINERALIZATION AGE: Middle Triassic

DEPOSIT

CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Tabular
DIMENSION: 1 Metres STRIKE/DIP:
COMMENTS: Phosphorite bed is 15 to 20 centimetres thick. Bedding is subhorizontal or dips gently westwards.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Triassic	Undefined Group	Toad	

LITHOLOGY: Phosphorite
Phosphatic Siltstone
Carbonaceous Calcareous Siltstone
Limestone
Shale

HOSTROCK COMMENTS: Toad Formation is Early to Middle Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Rock
COMMODITY GRADE
Phosphate 4.3000 Per cent
COMMENTS: Average content of 3.3-metres thick sequence of phosphatic siltstone and phosphorite.
REFERENCE: Open File - Phosphate Deposits in British Columbia.

CAPSULE GEOLOGY

The Tetsa River phosphate occurrence is situated on the north side of the Alaska Highway, 2 kilometres northeast of the confluence of the Tetsa and North Tetsa rivers, about 21 kilometres east of Summit Lake (Fieldwork 1987, Figure 3-7-1, sample locality SB87-40; Open File - Phosphate Deposits in British Columbia).

The deposit is in the Early to Middle Triassic Toad Formation, part of the platform to basinal sedimentary succession that makes up Ancestral North America (Geological Survey of Canada Map 1713A). The formation is composed of dark grey calcareous siltstone and shale, and minor silty limestone and very fine grained sandstone (Geological Survey of Canada Memoir 373, Map 1343A). Most lithologies are weakly to moderately carbonaceous. Phosphate-bearing beds occur in the lower and middle parts of the formation, an interval which varies in thickness from a few tens of metres to

CAPSULE GEOLOGY

approximately 290 metres (Fieldwork 1987, page 401; Geological Survey of Canada Bulletin 247).

The Tetsa River showing consists primarily of a bed of pelletal phosphorite, 15 to 20 centimetres thick, in a 3.3-metres thick sequence of dark grey carbonaceous siltstone and limestone (Open File - Phosphate deposits in British Columbia). The siltstone also contains nodules of phosphate locally. The beds in the sequence, which range from 0.5 to 1 metre in thickness, are subhorizontal or dip gently westwards, and average 4.3 per cent P2O5. The pellets in the phosphorite, assumed to consist of fluorapatite (Geological Survey of Canada Bulletin 247, page 20), range in size from 0.05 to 0.15 millimetre. Most have a nucleus of quartz or, less commonly, carbonate. The matrix comprises quartz with minor calcite and very minor feldspar. Also present are rare phosphatized shell fragments and nodules.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 396-410
EMPR OF (Butrenchuk, S.B. - Phosphate Deposits in British Columbia, unpublished)
GSC BULL 247
GSC MEM 373
GSC MAP 29-1959; 1343A; 1713A

DATE CODED: 1988/02/10
DATE REVISED: 1995/01/11

CODED BY: SBB
REVISED BY: CJR

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094K 081**

NATIONAL MINERAL INVENTORY:

NAME(S): **TETSA RIVER WEST**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K09W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 39 30 N
LONGITUDE: 124 20 28 W
ELEVATION: 880 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6502786
EASTING: 422191

LOCATION ACCURACY: Within 500M

COMMENTS: Located on north side of Alaska Highway, 1 kilometre north of the confluence of Tetsa and North Tetsa rivers, about 18 kilometres east of Summit Lake (Fieldwork 1987, Figure 3-7-1, sample locality SB87-41; Open File - Phosphate Deposits in British Columbia).

COMMODITIES: Phosphate

MINERALS

SIGNIFICANT: Fluorapatite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Middle Triassic

DEPOSIT

CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Syngenetic Replacement Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Tabular
DIMENSION: 1 Metres STRIKE/DIP: 150/50E TREND/PLUNGE:
COMMENTS: In eastern outcrop, phosphorite bed is 15 centimetres thick. Bedding attitude.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Triassic	Undefined Group	Toad	

LITHOLOGY: Phosphorite
Siltstone
Phosphatic Siltstone
Calcareous Siltstone
Dolomitic Siltstone

HOSTROCK COMMENTS: Toad Formation is Early to Middle Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

This phosphate occurrence is situated on the north side of the Alaska Highway, 1 kilometre north of the confluence of the Tetsa and North Tetsa rivers, about 18 kilometres east of Summit Lake (Fieldwork 1987, Figure 3-7-1, sample locality SB87-41; Open File - Phosphate Deposits in British Columbia).

The deposit is in the Early to Middle Triassic Toad Formation, part of the platformal to basinal sedimentary succession that makes up Ancestral North America (Geological Survey of Canada Map 1713A). The formation is composed of dark grey calcareous siltstone and shale, and minor limestone and very fine grained sandstone (Geological Survey of Canada Memoir 373, Map 1343A). Most lithologies are weakly to moderately carbonaceous. Phosphate-bearing beds occur in the lower and middle parts of the formation, an interval which varies in thickness from a few tens of metres to approximately 290 metres (Fieldwork 1987, page 401; Geological Survey of Canada Bulletin 247).

The Tetsa River West showing consists of two outcrops, about 300 metres apart, of thick-bedded, dark grey siltstone and dolomitic siltstone (Open File - Phosphate Deposits in British Columbia). Bedding strikes 150 degrees and dips 50 degrees northeast. The eastern outcrop contains a 15-centimetres thick bed of phosphorite consisting of 15 to 25 per cent dispersed pellets in a matrix of quartz and minor carbonate. The phosphate is assumed to consist of fluorapatite (Geological Survey of Canada Bulletin 247, page 20). The pellets are subangular to rounded and 0.2 to 0.3 millimetre in diameter. Most have a nucleus of quartz or, less commonly, carbonate; a few have both. In some pellets the phosphate appears to

CAPSULE GEOLOGY

grade into the carbonate nucleus, suggesting replacement of primary carbonate by phosphate. Within the phosphorite bed there is a layer, 5 centimetres thick, in which the volume of pellets reaches 50 to 60 per cent.

At the western outcrop, phosphate occurs as disseminated pellets and nodules in calcareous siltstone. They are 0.5 to 1 centimetre in diameter and their black colour stands out against the dark grey siltstone. Parts of the siltstone are very weakly phosphatic. Dessication cracks and ripple marks were observed at this locality but nowhere else in the area. These features suggest that phosphate deposition took place in a very shallow water environment subject to periodic emergence.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 396-410
EMPR OF (Butrenchuk, S.B. - Phosphate Deposits in British Columbia, unpublished)
GSC BULL 247
GSC MEM 373
GSC MAP 29-1959; 1343A; 1713A

DATE CODED: 1988/02/10
DATE REVISED: 1995/01/12

CODED BY: SBB
REVISED BY: CJR

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094K 082**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALASKA HIGHWAY**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K09W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 40 07 N
LONGITUDE: 124 26 32 W
ELEVATION: 1005 Metres

NORTHING: 6504052
EASTING: 416350

LOCATION ACCURACY: Within 500M

COMMENTS: Located on outcrop on north side of Alaska Highway, immediately north of the more easterly of two bridges which cross the North Tetsa River, about 13 kilometres east of Summit Lake (Fieldwork 1987, Figure 3-7-1, sample locality SB87-43; Open File - Phosphate Deposits in British Columbia).

COMMODITIES: Phosphate

MINERALS

SIGNIFICANT: Fluorapatite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Middle Triassic

DEPOSIT

CHARACTER: Stratabound
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Tabular
DIMENSION: 2 Metres STRIKE/DIP: 155/55W
COMMENTS: Thickness (2.5 metres) and attitude of phosphatic interval.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Triassic	Undefined Group	Toad	

LITHOLOGY: Phosphatic Siltstone
Phosphatic Limestone
Argillaceous Limestone
Calcareous Shale

HOSTROCK COMMENTS: Toad Formation is Early to Middle Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Rock
COMMODITY GRADE
Phosphate 5.5600 Per cent
COMMENTS: Average content of 2.5-metres thick phosphatic interval.
REFERENCE: Open File - Phosphate Deposits in British Columbia.

ORE ZONE: ROCK REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Rock
COMMODITY GRADE
Phosphate 10.1200 Per cent
COMMENTS: Phosphatic bed, 70 centimetres thick, higher in outcrop section.
REFERENCE: Open File - Phosphate Deposits in British Columbia.

CAPSULE GEOLOGY

This phosphate occurrence is situated on the north side of the Alaska Highway, immediately north of the more easterly of two bridges which cross the North Tetsa River, about 13 kilometres east of Summit Lake (Fieldwork 1987, Figure 3-7-1, sample locality SB87-43; Open File - Phosphate Deposits in British Columbia).

The deposit is in the Early to Middle Triassic Toad Formation, part of the platform to basinal sedimentary succession that makes up Ancestral North America (Geological Survey of Canada Map 1713A).

CAPSULE GEOLOGY

The formation is composed of dark grey calcareous siltstone and shale, and minor limestone and very fine grained sandstone (Geological Survey of Canada Memoir 373, Map 1343A). Most lithologies are weakly to moderately carbonaceous. Phosphate-bearing beds occur in the lower and middle parts of the formation, an interval which varies in thickness from a few tens of metres to approximately 290 metres (Fieldwork 1987, page 401; Geological Survey of Canada Bulletin 247).

The Alaska Highway showing is based on an interval of phosphatic siltstone and limestone, 2.5 metres thick, within a sequence of dark grey to black argillaceous limestone and calcareous shale. Bedding strikes 155 degrees and dips 55 degrees west. The phosphate, assumed to consist of fluorapatite (Geological Survey of Canada Bulletin 247, page 20), occurs as disseminated pellets, 0.1 millimetre across, and a few black nodules. They generally constitute less than 20 per cent of the rock, but locally may form as much as 40 per cent. The phosphatic interval averages 5.56 per cent P2O5 (Open File - Phosphate Deposits in British Columbia). Another phosphatic bed, 70 centimetres thick and 55 metres higher in the section, contains 10.12 per cent P2O5.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 396-410
EMPR OF (Butrenchuk, S.B. - Phosphate Deposits in British Columbia, unpublished)
GSC BULL 247
GSC MEM 373
GSC MAP 29-1959; 1343A; 1713A

DATE CODED: 1988/02/10
DATE REVISED: 1995/01/12

CODED BY: SBB
REVISED BY: CJR

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094K 083**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUMMIT LAKE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K10E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 39 21 N
LONGITUDE: 124 36 30 W
ELEVATION: 1220 Metres

NORTHING: 6502849
EASTING: 406683

LOCATION ACCURACY: Within 500M

COMMENTS: Located on outcrop on the Alaska Highway approximately 2 kilometres east of Summit Lake (Fieldwork 1987, Figure 3-7-1, sample locality SB87-45; Open File - Phosphate Deposits in British Columbia).

COMMODITIES: Phosphate

MINERALS

SIGNIFICANT: Unknown
COMMENTS: Principal mineral may be fluorapatite or collophane.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Tabular
DIMENSION: 5 Metres
COMMENTS: Thickness of phosphatic interval.

STRIKE/DIP: TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Permian	Undefined Group	Kindle	

LITHOLOGY: Phosphatic Shale
Phosphatic Chert
Shale
Silty Shale
Chert
Calcareous Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

INVENTORY

ORE ZONE: ROCK

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Rock

<u>COMMODITY</u>	<u>GRADE</u>	
Phosphate	3.6000	Per cent

COMMENTS: Sample taken over 2.5 metres in phosphatic shale.
REFERENCE: Open File - Phosphate Deposits in British Columbia.

CAPSULE GEOLOGY

Phosphate occurs in an outcrop on the Alaska Highway approximately 2 kilometres east of Summit Lake (Fieldwork 1987, Figure 3-7-1, sample locality SB87-45; Open File - Phosphate Deposits in British Columbia). Similar strata are exposed 100 metres to the west.

The deposit is in the Permian Kindle Formation, part of the platform to basinal sedimentary succession that makes up Ancestral North America (Geological Survey of Canada Maps 1343A, 1713A). Regionally, this formation is 90 to 205 metres thick and comprises siltstone, shale, calcareous siltstone and minor chert (Fieldwork 1987, page 399; Geological Survey of Canada Memoir 373). Locally, it may be thinner due to truncation by an overlying unconformity.

The outcrop is in a sequence of, from base to top, chert, shale and silty shale, and brown to grey calcareous siltstone. Overlying the chert is an interval, 5 metres thick, containing black, phosphatic laminations and lenses which contrast with the grey colour of the host shale. The phosphate mineral is unknown but may be fluorapatite or collophane. A sample taken over 2.5 metres in this

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1472
REPORT: RGEN0100

CAPSULE GEOLOGY

material averaged 3.6 per cent P2O5 (Open File - Phosphate Deposits in British Columbia). The underlying chert is very weakly phosphatic.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 396-410
EMPR OF (Butrenchuk, S.B. - Phosphate Deposits in British Columbia, unpublished)
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1988/02/10
DATE REVISED: 1995/01/12

CODED BY: SBB
REVISED BY: CJR

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094K 084**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRAM NORTH**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K02E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 01 03 N
LONGITUDE: 124 35 55 W
ELEVATION: 2170 Metres

NORTHING: 6431776
EASTING: 405559

LOCATION ACCURACY: Within 500M

COMMENTS: Located on sample F-8 in vein in shear zone, immediately north of Fram claim group, 10 kilometres southwest of Mount Sylvia in the Muskwa Ranges, Northern Rocky Mountains (Assessment Report 2875, Map 1).

COMMODITIES: Lead Copper Silver

MINERALS

SIGNIFICANT: Galena
COMMENTS: Copper mineral not specified, but probably bornite or chalcopyrite.

ASSOCIATED: Quartz Calcite Pyrite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

SHAPE: Tabular

DIMENSION: Metres STRIKE/DIP: 010/50W

TREND/PLUNGE:

COMMENTS: Orientation of shear zone hosting mineralized vein, on margin of dyke.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Proterozoic	Undefined Group	Aida	

LITHOLOGY: Diabase Dike
Gabbro Dike
Dolomitic Mudstone
Dolomitic Siltstone
Dolomite
Quartz Carbonate Vein

HOSTROCK COMMENTS: Aida Formation is part of the Helikian Muskwa Assemblage.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated in the Muskwa Anticlinorium.

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1970
SAMPLE TYPE: Chip	
COMMODITY	GRADE
Silver	51.0000 Grams per tonne
Copper	0.3300 Per cent
Lead	3.2100 Per cent

COMMENTS: Sample F-8, over 50 centimetres, from mineralized quartz-carbonate vein.

REFERENCE: Assessment Report 2875, Map 1.

CAPSULE GEOLOGY

The Fram North is a lead showing, 10 kilometres southwest of Mount Sylvia in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 2875, Map 1). The main mineralization in this general locality is actually covered by another, related MINFILE occurrence 2.75 kilometres to the south, the Fram copper showing (094F 004).

The Fram North occurrence is in a region known as the Muskwa Anticlinorium, a major north-northwest trending structure characterized by large folded thrust sheets which expose rocks as old as Middle Proterozoic (Helikian), as well as Paleozoic rocks (Geological Survey of Canada Map 1343A; Geological Society of

CAPSULE GEOLOGY

America, Geology of North America, Volume G-2, page 639). All belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Middle Proterozoic rocks are pre-Windermere Supergroup, and are known as the Muskwa Assemblage (Geological Society of America, Geology of North America, Volume G-2, page 111).

This assemblage of carbonate and clastic rocks has been divided into seven formations. The Fram North showing is in the Aida Formation, a 1200 to 1800-metre thick succession of dolomitic mudstone and siltstone, dolostone, and minor mudstone, sandstone and limestone (Geological Survey of Canada Memoir 373, Paper 67-68). In this area, as well as regionally, these rocks are unconformably overlain by Lower Cambrian sedimentary rocks of the Atan Group. All rocks are gently folded, and some have slaty cleavage. The Proterozoic rocks are cut by northwest to northeast-striking, steeply west-dipping diabase and gabbro dykes; they are truncated by the Lower Cambrian unconformity (Geological Survey of Canada Memoir 373). Contact metamorphism affects the country rocks for up to 1 metre away from the dyke contacts, shown by chlorite, actinolite and epidote. The dyke contacts are commonly sheared.

At the Fram North showing, the Aida Formation strikes northwest and dips 30 degrees southwest (Assessment Report 2875). The rocks are intruded by a diabase dyke which has sheared margins. A quartz-carbonate vein in this north-northeast striking, moderately west-dipping shear zone contains galena and minor copper (mineral not specified, but probably bornite or chalcopyrite), and probably pyrite. A chip sample taken over 50 centimetres assayed 3.21 per cent lead, 0.33 per cent copper, and 51 grams per tonne silver (Assessment Report 2875, Map 1).

BIBLIOGRAPHY

- EMPR GEM 1971-71
- EMPR ASS RPT *2875
- GSC MEM 373
- GSC P 67-68
- GSC MAP 1343A; 1713A
- GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1994/11/07
DATE REVISED: 1994/11/08

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 085**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOB**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K04W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 00 28 N
LONGITUDE: 125 50 48 W
ELEVATION: 1540 Metres

NORTHING: 6433121
EASTING: 331803

LOCATION ACCURACY: Within 500M

COMMENTS: Located on diamond drill hole 81-M3 on Bob 3 claim, 7.5 kilometres southeast of Driftpile Creek, 21 kilometres southwest of confluence of Gataga and South Gataga rivers in Muskwa Ranges (Assessment Report 10361, Figure 2).

COMMODITIES: Barite Lead Zinc

MINERALS

SIGNIFICANT: Barite
COMMENTS: No visible lead-zinc mineralization. Commodities based on assays.
ASSOCIATED: Pyrite
MINERALIZATION AGE: Devonian

DEPOSIT

CHARACTER: Stratiform Podiform Massive
CLASSIFICATION: Sedimentary Exhalative Syngenetic Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Tabular
MODIFIER: Folded Faulted
DIMENSION: Metres STRIKE/DIP: 320/70W TREND/PLUNGE:
COMMENTS: General attitude of mineralized strata.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Devonian Earn Gunsteel

LITHOLOGY: Baritic Pyritic Mudstone
Cherty Argillite
Black Shale
Bedded Barite

HOSTROCK COMMENTS: Middle to Upper Devonian Gunsteel Formation is informal.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the Gataga mineral district, in the Kechika Trough.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Zinc 0.3300 Per cent
COMMENTS: From drill hole 81-M3, from baritic zone, over 4.2 metres.
REFERENCE: Assessment Report 10361, page 4.

CAPSULE GEOLOGY

The Bob occurrence is based on weak barite-lead-zinc mineralization in drill core (hole 81-M3) from the Bob 3 claim, 7.5 kilometres southeast of Driftpile Creek, 21 kilometres southwest of the confluence of the Gataga and South Gataga rivers, in the Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 10361, Figure 2).

The Bob claim group is in the Gataga mineral district, in a belt of Proterozoic and Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Exploration and Mining Geology, Volume 1, page 1; Geological Survey of Canada Map 1713A). The property is underlain mainly by the informally-named, Middle to Upper Devonian Gunsteel Formation of the Devono-Mississippian Earn Group (Assessment Report 10361; Geological Survey of Canada Memoir 373, Map 1343A). This unit comprises thinly-bedded black shale, cherty argillite, and locally baritic and

CAPSULE GEOLOGY

pyritic mudstone. The rocks are tightly folded, and faulted; bedding strikes about 320 degrees and dips around 70 degrees southwest. The formation is important as it hosts stratiform barite-lead-zinc mineralization in the region, such as at the Driftpile Creek deposit (MINFILE 094K 066) a few kilometres along strike to the northwest.

The property was drilled in 1981 to evaluate a moderate, northwest-trending, 1.5-kilometre long lead-zinc soil anomaly (Assessment Reports 9394, 10361). Hole 81-M3 intersected, at around -140 metres, a 5-metres thick zone of bedded pyrite, nodular barite and cherty argillite. A central massive pyrite zone returned an assay of 0.38 per cent zinc over 2.2 metres (Assessment Report 10361). The underlying baritic interval assayed 0.33 per cent zinc over a further 4.2 metres. Otherwise, no significant mineralization was encountered.

BIBLIOGRAPHY

EMPR EXPL 1980-447; 1981-271
EMPR ASS RPT 9394, *10361
GSC MEM 373
GSC P 88-1E, pp. 1-12
GSC MAP 1343A; 1713A
EMG, 1992, *Volume 1, pp. 1-20
Insley, M.W. (1990): Sedimentology and Geochemistry of the
Driftpile Ba-Fe-Zn-Pb mineralization, Northeastern British
Columbia, Canada; unpublished Ph.D. thesis, University of London.
Chevron File
EMPR OF 2000-22

DATE CODED: 1990/01/04
DATE REVISED: 1994/12/08

CODED BY: SBB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 086**

NATIONAL MINERAL INVENTORY: 94K/7,8 Pb 1

NAME(S): **REP 6**, CTV

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K08W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 25 20 N
LONGITUDE: 124 24 12 W
ELEVATION: 1380 Metres

NORTHING: 6476574
EASTING: 418032

LOCATION ACCURACY: Within 500M

COMMENTS: Located on chip sample 80ZWT12 on Rep 6 claim, 500 metres west of Chischa River, 29.5 kilometres south-southeast of Summit Lake on the Alaska Highway (Assessment Report 9202, Geochemistry map, Sheet 3).

COMMODITIES: Barite Zinc Lead Fluorite

MINERALS

SIGNIFICANT: Barite Sphalerite Galena Fluorite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound
CLASSIFICATION: Replacement Industrial Min.
TYPE: E10 Carbonate-hosted barite
DIMENSION: Metres STRIKE/DIP: 330/84E TREND/PLUNGE:
COMMENTS: Local bedding attitude.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Undefined Group Dunedin

LITHOLOGY: Bedded Fine Grained Limestone
Dolomite

HOSTROCK COMMENTS: Mineralization occurs a few tens of metres above contact with Stone Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: One of several MINFILE showings in narrow belt of Devonian carbonates.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Chip
COMMODITY GRADE
Lead 1.5300 Per cent
Zinc 4.7900 Per cent
COMMENTS: Assay of 5-metre chip sample.
REFERENCE: Assessment Report 9202, page 11, and Geochemistry map, Sheet 3.

CAPSULE GEOLOGY

The Rep 6 is an occurrence of minor barite-lead-zinc mineralization on the edge of the mountainous Muskwa Ranges of the Northern Rocky Mountains, 500 metres west of Chischa River, 29.5 kilometres south-southeast of the settlement of Summit Lake on the Alaska Highway (Assessment Report 9202, Geochemistry Map, Sheet 3). The Rep 6 is one of a number of similar MINFILE occurrences lying along a narrow, north-northwest trending belt of mainly Devonian sedimentary rocks. The rocks in this 50-kilometres long, 3-kilometres wide belt are bounded to the west by a steeply west-dipping reverse fault which juxtaposes mostly Middle Proterozoic and Lower Paleozoic rocks. To the east, the belt is flanked by moderately folded, mainly Mesozoic rocks forming the more subdued, Rocky Mountain Foothills. All these rocks belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Devonian rocks in this belt generally dip steeply eastward. The most important units are the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Map 1343A, Memoir 373; Assessment Report 4300). The Stone Formation consists of pale grey, fine-grained, thick-bedded dolostone, dolomitic breccia and dolomitic quartz sandstone. The Dunedin Formation comprises grey, well-bedded,

CAPSULE GEOLOGY

fine-grained limestone, with minor dolostone and siliceous lithologies. Other units in the area include the underlying Silurian to Lower Devonian Nonda, Muncho-McConnell and Wokkpash formations, and the overlying Middle Devonian to Mississippian Besa River Formation.

In the early 1970s and again in the early 1980s, the belt was staked to investigate widespread stratabound barite associated with lead-zinc mineralization in the Dunedin and, locally, Stone formations (Assessment Reports 4300, 9202). The Rep 6 showing is hosted in a unit of limestone and dolostone, apparently of the Dunedin Formation a few tens of metres above its contact with the Stone Formation (Assessment Reports 9202, 4300). Mineralization consists of barite, fluorite, galena and sphalerite. A 5-metre chip sample (80ZWT12) was assayed at 4.79 per cent zinc and 1.53 per cent lead (Assessment Report 9202).

BIBLIOGRAPHY

EMPR EXPL 1980-449
EMPR ASS RPT 4300, *9202
GSC BULL 186
GSC MEM 373
GSC MAP 1343A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/28

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 087**

NATIONAL MINERAL INVENTORY:

NAME(S): **PENNY**, TOAD RIVER

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K12E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 43 25 N
LONGITUDE: 125 41 02 W
ELEVATION: 1106 Metres

NORTHING: 6512388
EASTING: 344597

LOCATION ACCURACY: Within 500M

COMMENTS: Located on outcrop on west-flowing tributary, 2 kilometres east of Toad River, 5 kilometres northeast of confluence of Yedhe Creek and Toad River in Muskwa Ranges, 6 kilometres south of Alaska Highway (Keays, Robert (1989): Personal Communication).

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
MINERALIZATION AGE: Lower Silurian

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 60 x 30 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Width and height of limestone outcrop. Bedding strikes north-northwest and dips moderately east.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Lower Silurian	Undefined Group	Nonda	
<u>DATING METHOD:</u>	Fossil		

LITHOLOGY: Limestone
Dolomite
Quartz Sandstone

HOSTROCK COMMENTS: Limestone is a minor component of Nonda Formation, generally restricted to lower part.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated near hinge zone of northwest-trending Muskwa Anticlinorium.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Grab
COMMODITY GRADE
Limestone 56.0500 Per cent
COMMENTS: Grade given for calcium oxide.
REFERENCE: Industrial Minerals File - Assay certificate; Open File 1992-18, p.12.

CAPSULE GEOLOGY

The Penny showing consists of very pure limestone and is situated on a west-flowing tributary, 2 kilometres east of the Toad River, 5 kilometres northeast of the confluence of Yedhe Creek and Toad River in the Muskwa Ranges, 6 kilometres south of the Alaska Highway (Keays, Robert (1989): Personal Communication). The limestone is in the Lower Silurian Nonda Formation which consists predominantly of dark grey, thick-bedded dolostone and subordinate quartz sandstone; limestone is rare, generally restricted to the lower part (Geological Survey of Canada Memoir 373). In this area, the Nonda Formation is near the hinge zone of the north-northwest trending and plunging Muskwa Anticlinorium, a regional structure characterized by moderate folding and thrust faulting (Geological Survey of Canada Map 1343A; Geological Society of America, Geology of North America, Volume G-2, page 639). Here, the formation strikes north-northwest and dips moderately eastward into the slopes east of the Toad River over a strike length of 8 kilometres.

CAPSULE GEOLOGY

This particular limestone deposit comprises a 60-metres wide, 30-metres high outcrop of extremely pure, porcelaneous (cryptocrystalline), milky white, massive limestone (Industrial Minerals File - Keays, Robert (1989): Letter). A sample of the limestone assayed 56.05 per cent CaO, 0.35 per cent MgO, 0.11 per cent SiO₂, 0.01 per cent Al₂O₃, 0.01 per cent Fe₂O₃, 0.01 per cent MnO 0.02 per cent Na₂O, 0.01 per cent K₂O, 0.01 per cent TiO₂, 0.01 per cent P₂O₅ and 43.74 per cent ignition loss (Industrial Minerals File - Assay Certificate, Cominco Limited, 1989; Open File 1992-18, page 129).

BIBLIOGRAPHY

EMPR OF *1992-18, p. 128-129
EMPR PF (*Keays, Robert (1989): Letter, and assay certificate by Cominco Ltd.)
GSC MAP 1343A; 1713A
GSC MEM 373
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).
Placer Dome File

DATE CODED: 1989/11/06
DATE REVISED: 1995/01/17

CODED BY: PSF
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094K 088**

NATIONAL MINERAL INVENTORY:

NAME(S): **CANYON CREEK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094K11W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 58 31 13 N
LONGITUDE: 125 19 44 W
ELEVATION: 1981 Metres

NORTHING: 6488988
EASTING: 364361

LOCATION ACCURACY: Within 500M

COMMENTS: A ridge immediately south of (and uphill from) sample #626954, about 5 kilometres east of the Churchill mine (094K 003) and 3 kilometres south of Yedhe Lakes (Assessment Report 24603).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: E04 Sediment-hosted Cu

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Helikian

GROUP

Undefined Group

FORMATION

Tuchodi

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Dolomitic Conglomerate
Quartzite
Sandy Dolomite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

At the Canyon Creek showing a 300+ metre section of clean quartzite is overlain by sandy dolomite, separated by a 1-2 metre bed of dolomitic conglomerate. The conglomerate is locally coated by thick malachite; rare pebbles of vein quartz or massive chalcopyrite were noted up to 100 metres downslope. The malachite coating on pebbles within the dolomitic conglomerate appears to be a recent precipitate within a permeable and reactive bed, rather than due to weathering of Proterozoic stratabound copper mineralization (Assessment Report 24603).

BIBLIOGRAPHY

EMPR ASS RPT *24603
GSC MEM 373
GSC P 67-68
GSC MAP 1343A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1996/07/08
DATE REVISED: / /

CODED BY: GO
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 001**

NATIONAL MINERAL INVENTORY: 94L/3 Pb 1

NAME(S): **LINDA**, WEST, JACKSTONE,
GORF

STATUS: Prospect
 REGIONS: British Columbia
 NTS MAP: 094L03E
 BC MAP:
 LATITUDE: 58 12 09 N
 LONGITUDE: 127 09 53 W
 ELEVATION: 1800 Metres

MINING DIVISION: Liard
 UTM ZONE: 09 (NAD 83)
 NORTHING: 6452724
 EASTING: 607861

LOCATION ACCURACY: Within 500M
 COMMENTS: Located on "old" trenches 1 and 2, west of Halls Creek, a western tributary of Frog River, 19 kilometres northeast of Mount Irving in Stikine Ranges of Cassiar Mountains (Assessment Reports 16898, Figure 3; 20517, Figure 4).

COMMODITIES: Lead Silver Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite
 COMMENTS: Argentiferous galena. Locally sheared.
 ASSOCIATED: Rhodonite Rhodochrosite Pyrolusite Pyrrhotite Quartz
 ALTERATION: Pyrite Silica Limonite
 ALTERATION TYPE: Pyrite Silicific'n Oxidation
 MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Disseminated Podiform
 CLASSIFICATION: Epigenetic Hydrothermal
 SHAPE: Irregular
 MODIFIER: Faulted
 DIMENSION: 1000 x 1000 Metres STRIKE/DIP: 056/
 COMMENTS: Area of mineralization, including high grade sub-area measuring 180 by 120 metres. Strike of main, structurally-controlled mineralized zone.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic	Ingenika	Swannell	
Upper Proterozoic	Ingenika	Tsaydiz	

LITHOLOGY: Chloritic Phyllite
 Biotite Sericite Schist
 Micaceous Quartzite
 Grit
 Calcareous Phyllite
 Carbonate
 Gossan
 Ferricrete
 Quartz Porphyry Dike
 Basic Intermediate Sill

HOSTROCK COMMENTS: Some Cambro-Ordovician rocks may be present on property.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Cassiar Mountains
 TERRANE: Cassiar
 METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Greenschist
 COMMENTS: Northeast of Thudaka Batholith.

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1987
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Silver		569.0000	Grams per tonne
Copper		0.6000	Per cent
Lead		29.7000	Per cent
Zinc		6.8000	Per cent

COMMENTS: Averages of early Conwest sampling and later Cominco check samples, primarily from concentrated area of mineralized boulders and float.
 REFERENCE: Assessment Report 16898.

CAPSULE GEOLOGY

This silver-lead-zinc prospect is situated in the upper reaches of Halls Creek, a small tributary west of Frog River, 19 kilometres northeast of Mount Irving in the Stikine Ranges of the Cassiar Mountains (Assessment Reports 16898, Figure 3; 20517, Figure 4).

The occurrence is in a northwest-trending belt of metasedimentary and minor metavolcanic rocks on the northeastern margin of the mid-Cretaceous Thudaka Batholith, possibly a faulted segment of the larger Cassiar Batholith (Geological Survey of Canada Paper 77-1A). The stratified rocks belong mostly to the Upper Proterozoic Ingenika Group of the Cassiar terrane; some Cambro-Ordovician units may be present as well (Geological Survey of Canada Maps 1712A, 1713A). They comprise calcareous and non-calcareous phyllites, schists, limestone and marble and minor greenstone (Geological Survey of Canada Map 42-1962). Metamorphic grade is up to greenschist facies.

In more detail, the property is underlain by chloritic phyllite or biotite-sericite schist, and micaceous quartzite of the Swannell Formation. Calcareous phyllite and carbonate of the overlying Tsaydiz Formation may also be present (Assessment Reports 2336, 16898, 20517). Coarse-grained biotite quartz monzonite and granodiorite of the Thudaka Batholith outcrops in the southwest of the property, with a steeply north dipping contact. Several quartz-porphry dykes have been mapped and at least one basic to intermediate sill (Assessment Report 16898). The metasediments strike west or northwest, and dip moderately to the northeast or southwest, due to folding. One vertical, northwest-striking fault, and a steep, northeast-striking fault cut the property. The area of interest is centred around their intersection, covering about 1 square kilometre in the upper reaches of Halls Creek. This area has been mineralized, apparently accompanied by pyritic alteration and silicification; subsequent oxidation has produced conspicuous gossans and ferricrete.

Mineralization in the phyllite and quartzite occurs in lenses and fine stringers that are parallel or subparallel to the main fault structures. It consists of argentiferous galena, sphalerite, rhodonite, rhodochrosite and minor chalcopyrite and pyrolusite, in addition to the more widespread pyrite and pyrrhotite (Assessment Reports 2336, 16898). The more substantial sulphides may be massive or a mixture of sulphides and quartzite breccia. There is very little, if any, hydrothermal quartz or gangue quartz (Assessment Report 16898). Locally the galena is smeared out or crushed, indicating later faulting.

The main showings are located on areas of frost-heaved, mineralized boulders or float. Old trenches occur on the former Linda 9 claim (Assessment Report 2336), also designated the West 1 claim (Assessment Report 16898) and the Jackstone 1 claim (Assessment Report 20517). The best material is found in an area measuring 180 metres by 120 metres. A select grab sample was assayed at 13.22 per cent lead, 7.33 per cent zinc, and 120 grams per tonne silver (Assessment Report 2336). Early sampling by Conwest of the high grade float material, combined with more recent check sampling by Cominco, resulted in the following averages: 569 grams per tonne silver, 29.7 per cent lead, 6.8 per cent zinc and 0.6 per cent copper (Assessment Report 16898). Anomalous gold is also present. Trenching in these zones has revealed the mineralized bedrock, which has also been tested by a few diamond drill holes (Assessment Report 16898). Elsewhere on the property, sparse pyrite and galena occur in disseminations or in laminae in silicified sericite-biotite schist.

The northeast-trending (about 056 degrees) fault, probably the dominant structural control, is exposed in the creek in the north, and has similar mineralization, including a 2-metre thick capping of pyrolusite. The quartzite, grit and phyllite here are cut by fractures which are mineralized with galena, sphalerite, pyrite, rhodochrosite, rhodonite and minor chalcopyrite. High grade sulphides occur at fracture intersections. There is a reference to early work (done by Lake Expanse in 1952-1953) centred on this creek section, in which channel samples returned assays of 20.6 grams per tonne silver, 2.1 per cent lead and 1.3 per cent zinc over 8.2 metres, and 10.3 per cent silver, 1.2 per cent lead and 0.7 per cent zinc over 87 metres (Assessment Report 16898). The channel samples appear to have been done along, not across, the mineralized fault.

BIBLIOGRAPHY

- EMPR AR 1959-18; 1963-130
- EMPR GEM 1971-106
- EMPR EXPL 1979-270
- EMPR ASS RPT 467, *2336, 2995, 7523, 8549, *16898, 20517
- GSC P 77-1A, pp. 243-246

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1484
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/10

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 002**

NATIONAL MINERAL INVENTORY: 94L/6 Pb 1

NAME(S): **OH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L06W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 15 39 N
LONGITUDE: 127 21 27 W
ELEVATION: 1680 Metres

NORTHING: 6458925
EASTING: 596374

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized vein in OH 1 claim, on small tributary of the Frog River, 6 kilometres east of Lamarque Pass, 21 kilometres south of southern end of Denetiah Lake in Cassiar Mountains (Assessment Report 3214, Maps 1A, 2).

COMMODITIES: Lead Silver

MINERALS

SIGNIFICANT: Galena Arsenopyrite
COMMENTS: Arsenopyrite found in related float.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Massive
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: Metres STRIKE/DIP: 295/45N TREND/PLUNGE:
COMMENTS: Average attitude of bedding and foliation.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Proterozoic-Paleoz.	Undefined Group	Unnamed/Unknown Formation	

LITHOLOGY: Phyllite

HOSTROCK COMMENTS: Undivided metasedimentary rocks of Upper Proterozoic to Cambro-Ordovician age, most of which belong to Ingenika Group.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca	PHYSIOGRAPHIC AREA: Cassiar Mountains	
TERRANE: Cassiar		
METAMORPHIC TYPE: Regional	RELATIONSHIP: Regional	GRADE: Greenschist
COMMENTS: Situated a few kilometres east of the Thudaka Batholith.		

CAPSULE GEOLOGY

This is a minor lead-silver showing, situated in the OH 1 claim on a small tributary of the Frog River, 6 kilometres east of Lamarque Pass, 21 kilometres south of the southern end of Denetiah Lake in the Cassiar Mountains (Assessment Report 3214, Maps 1A, 2).

The area is underlain by a variety of rocks of Upper Proterozoic to Cambro-Ordovician age, belonging to the Cassiar terrane of the Omineca Belt (Geological Survey of Canada Maps 42-1962, 1712A, 1713A). The rocks, most of which belong to the Ingenika Group, have been metamorphosed to greenschist grade, and generally consist of calcareous and non-calcareous phyllites, schist, micaceous quartzite, limestone, marble, greenstone and pegmatite. Bedding and foliation range in strike from 270 to 320 degrees, and dip from 20 to 70 degrees north to northeast. A few kilometres to the west is a complex of intrusive and metamorphic rocks which marks the margin of the Middle Cretaceous Thudaka Batholith, possibly a faulted segment of the larger Cassiar Batholith (Assessment Report 3214; Geological Survey of Canada Paper 77-1A).

The OH property is underlain by phyllites, and contains at least two outcrops of mineralized quartz veins, 375 metres apart (Assessment Report 3214). Galena is finely disseminated in the quartz, forming up to 2 per cent. Loose blocks of quartz in the area contain up to 60 per cent massive galena, and arsenopyrite is common. High lead and silver assays have been obtained from samples of the float.

BIBLIOGRAPHY

EMPR ASS RPT *3214
GSC P 77-1A, pp. 243-246

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1486
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/06

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 003**

NATIONAL MINERAL INVENTORY: 94L/5 Cu 1

NAME(S): **TUCHO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L05W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 16 36 N
LONGITUDE: 127 57 40 W
ELEVATION: 1720 Metres

NORTHING: 6459983
EASTING: 560932

LOCATION ACCURACY: Within 500M

COMMENTS: Located on area of mineralization, 9.5 kilometres west-southwest of western end of Tucho Lake in Stikine Ranges of Cassiar Mountains (Assessment Report 3499, Map 1).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
COMMENTS: Assumed chalcopyrite.

ALTERATION:	Pyrite	Magnetite	Epidote	Pyrite	Oxidation	Chloritic
ALTERATION TYPE:	Argillic		Sericitic			
MINERALIZATION AGE:	Unknown					

DEPOSIT

CHARACTER:	Disseminated	Vein	Breccia	
CLASSIFICATION:	Hydrothermal	Epigenetic		
DIMENSION:		Metres	STRIKE/DIP: 280/	TREND/PLUNGE: /
COMMENTS:	Trend of brecciated zone where mineralization is centred.			

HOST ROCK

DOMINANT HOSTROCK: Volcanic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Triassic-Jurassic	Takla	Undefined Formation	

LITHOLOGY: Augite Porphyry Volcanic

HOSTROCK COMMENTS: Takla Group is Upper Triassic to Lower Jurassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane	PHYSIOGRAPHIC AREA: Cassiar Mountains
TERRANE: Quesnel	
COMMENTS: Immediately north of Early Jurassic Pitman Batholith.	

CAPSULE GEOLOGY

This minor copper showing is situated 9.5 kilometres west-southwest of the western end of Tucho Lake, in the Stikine Ranges of the Cassiar Mountains in the Northern Rocky Mountains (Assessment Report 3499, Map 1).

The occurrence is within a fairly small area or narrow belt of volcanic rocks, between the mid-Cretaceous Cassiar Batholith to the north (in the Cassiar terrane), and the Early Jurassic, granodioritic Pitman Batholith to the south. The latter intrusion and the volcanics belong to the terrane of Quesnellia (Geological Survey of Canada Map 1713A). The volcanics are part of the Upper Triassic to Lower Jurassic Takla Group, composed mainly of basic to intermediate volcanic and volcanoclastic rocks of island arc origin (Geological Survey of Canada Map 1712A). The geology is shown in more detail in Geological Survey of Canada Map 42-1962, but the units are designated differently, and have since been revised.

The mineralization is hosted by augite porphyry volcanics (Assessment Report 3499). The area is structurally complex due to numerous intersecting faults and shear zones, and has been affected by widespread argillic, sericitic and limonitic alteration. This area is surrounded by a broader area of chloritic alteration, accompanied by magnetite and epidote. Pyrite appears to be more abundant towards the margin of the main altered area, suggesting a pyrite halo.

Copper mineralization is apparently centred on a prominent brecciated zone, trending 280 degrees, in the altered augite porphyry volcanics (Assessment Report 3499). Sulphides, presumably mainly chalcopyrite, are disseminated in the rock and in fracture veinlets.

BIBLIOGRAPHY

EMPR GEM 1972-492
EMPR ASS RPT *3499

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1488
REPORT: RGEN0100

BIBLIOGRAPHY

GSC P 77-1A, pp. 243-246
GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/13

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 004**

NATIONAL MINERAL INVENTORY: 94L/3 Cu 1

NAME(S): **JACKSTONE CREEK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L03W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 07 27 N
LONGITUDE: 127 27 49 W
ELEVATION: 1840 Metres

NORTHING: 6443565
EASTING: 590495

LOCATION ACCURACY: Within 500M

COMMENTS: Located from map symbol, 1 kilometre west-northwest of summit of Mount Irving, 8.5 kilometres south of Jackstone Creek in Stikine Ranges of Cassiar Mountains (Geological Survey of Canada Map 42-1962).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Unknown
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: Metres
COMMENTS: Strike of shear zone hosting mineralization.

STRIKE/DIP: 345/

TREND/PLUNGE: /

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Pitman Batholith

LITHOLOGY: Foliated Quartz Diorite
Foliated Granodiorite

HOSTROCK COMMENTS: Pitman Batholith belongs to Guichon Plutonic Suite of Quesnellia.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
COMMENTS: Flanked by related Early Mesozoic Volcanics of island arc origin.

PHYSIOGRAPHIC AREA: Cassiar Mountains

GRADE: Greenschist

CAPSULE GEOLOGY

This minor copper showing is situated in rugged terrain, 1 kilometre west-northwest of the summit of Mount Irving, 8.5 kilometres south of Jackstone Creek, in the Stikine Ranges of the Cassiar Mountains of Northern British Columbia (map symbol on Geological Survey of Canada Map 42-1962).

The occurrence is in the Pitman Batholith, a large Early Jurassic intrusion that is part of the Guichon Plutonic Suite in the terrane of Quesnellia. It is composed of well foliated quartz diorite and granodiorite (Geological Survey of Canada Maps 42-1962, 1712A, 1713A; Geological Society of America, Geology of North America, Volume G-2, page 500). The rock is characterized by large prismatic hornblende grains and white plagioclase. Much of the pluton is metamorphosed to greenschist grade, especially near faults. The Guichon Plutonic Suite is spatially and genetically related to Early Mesozoic volcanics of island arc origin, representatives of which occur marginal to the intrusion, a few kilometres to the north.

No details of the mineralization are available. Minor copper stain (presumably malachite) occurs in a shear zone which trends 345 degrees (Geological Survey of Canada Map 42-1962, marginal notes).

BIBLIOGRAPHY

GSC P 77-1A, pp. 243-246
GSC MAP 42-1962; 1712A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/13

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 005**

NATIONAL MINERAL INVENTORY: 94L/12 Cu 1

NAME(S): **DALL LAKE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L12E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 35 06 N
LONGITUDE: 127 37 00 W
ELEVATION: 785 Metres

NORTHING: 6494672
EASTING: 580426

LOCATION ACCURACY: Within 500M

COMMENTS: Located on east shore of Dall Lake, 5 kilometres from its southern end, 23 kilometres west-southwest of Mount Winston in Cassiar Mountains (map symbol on Geological Survey of Canada Map 42-1962).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Cambrian	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Siliceous Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
COMMENTS: Immediately northeast of Kechika Fault.

PHYSIOGRAPHIC AREA: Cassiar Mountains

CAPSULE GEOLOGY

This is a minor copper showing, situated on the east shore of Dall Lake, 5 kilometres from its southern end, 23 kilometres west-southwest of Mount Winston in the Cassiar Mountains (Geological Survey of Canada Map 42-1962).

The occurrence lies in an infolded area or belt of Cambrian limestone, which overlies Upper Proterozoic and Lower Cambrian siliciclastic and carbonate rocks (Geological Survey of Canada Maps 42-1962, 1712A, 1713A). The region is southwest of the Northern Rocky Mountain Trench, and is part of the Cassiar terrane. A few kilometres to the west, the rocks are cut off by the right-lateral Kechika Fault.

The only known records of the mineralization describe minor chalcopyrite in numerous veinlets cutting intensely silicified limestone (Bulletin 12, page 52; Geological Survey of Canada Map 42-1962, marginal notes).

BIBLIOGRAPHY

EMPR BULL 12-52
GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/14

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 006**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLACK WEDNESDAY**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 33 02 N
LONGITUDE: 126 38 27 W
ELEVATION: 1350 Metres

NORTHING: 6492420
EASTING: 637284

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized veins on cliff above small tributary south of lower Bluff Creek, 5 kilometres northeast of Gataga River, 8 kilometres northwest of Split Top Mountain in Muskwa Ranges (Open File 1995-4, lithochemistry sample site 1).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Azurite Chalcocite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Concordant
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 30 x 4 Metres STRIKE/DIP: 120/65S TREND/PLUNGE: /
COMMENTS: Approximate strike length and maximum composite thickness of vein system. Bedding attitude, with which veins are subparallel.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian	Undefined Group	Unnamed/Unknown Formation	

LITHOLOGY: Limestone
Siliceous Rock

HOSTROCK COMMENTS: Limestone is Middle to Upper Cambrian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in the northwest-trending Kechika Trough.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1995
SAMPLE TYPE: Rock
COMMODITY GRADE
Copper 0.8600 Per cent
COMMENTS: Lithochemical analysis of select grab sample.
REFERENCE: Open File 1995-4, map sample number 1.

CAPSULE GEOLOGY

The Black Wednesday showing is a copper-bearing quartz vein, on a cliff above a small tributary south of lower Bluff Creek, 5 kilometres northeast of the Gataga River, 8 kilometres northwest of Split Top Mountain in the Muskwa Ranges of the Northern Rocky Mountains (Open File 1995-4, lithochemistry sample site 1).

The area, which is just northeast of the Northern Rocky Mountain Trench, is underlain by Cambrian to Devonian-Mississippian sedimentary rock units which have been deformed into tight, northeasterly-overtaken folds and imbricated by several thrust faults (Fieldwork 1994, Open File 1995-4; Geological Survey of Canada Maps 42-1962, 1712A, Paper 88-1E). The general strike is northwest, and the dominant dip is moderately to steeply southwest.

The Black Wednesday showing is in a narrow, thrust-bounded panel which is made up of an unnamed Middle to Upper Cambrian limestone unit, and overlying shales, siltstones and calcareous rocks of the Cambro-Ordovician Kechika Group and the Ordovician to Lower Devonian Road River Group (Open File 1995-4). The mineralization is hosted in anastomosing quartz veins near the top of the Cambrian limestone

CAPSULE GEOLOGY

(Fieldwork 1994, page 293). The limestone is grey, fine to medium grained, and strikes 120 degrees and dips 65 degrees southwest. The veins, which are approximately concordant with the bedding, have a composite thickness of 3 to 4 metres; individual veins are up to 1 metre thick. They have a strike length of at least 30 metres. Lenses or sheets of limestone between the veins commonly contain highly silicified rock which may have been siliciclastic interbeds in the limestone.

Small amounts of chalcopyrite and chalcocite were noted in a few parts of the vein system. Weathered fracture surfaces in the quartz veins are coated with orange to red-brown iron oxides, and locally with extensive malachite and azurite. A select sample of the quartz vein with visible mineralization was analysed at 0.86 per cent copper (Open File 1995-4).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK *1994, pp. 277-295; *1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
GSC P 88-1E, pp. 1-12

DATE CODED: 1995/02/06
DATE REVISED: 1998/12/21

CODED BY: CJR
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 007**

NATIONAL MINERAL INVENTORY: 94L/11 Cu 2

NAME(S): **DENETIAH CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L11E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 34 16 N
LONGITUDE: 127 10 58 W
ELEVATION: 990 Metres

NORTHING: 6493727
EASTING: 605691

LOCATION ACCURACY: Within 5 KM

COMMENTS: Located very approximately, from meagre description, 11.25 kilometres southwest of mouth of Denetiah Creek (at Gataga River), 10 kilometres south-southeast of Mount Winston in Kechika Ranges of Cassiar Mountains (Bulletin 12, page 51).

COMMODITIES: Copper Lead

MINERALS

SIGNIFICANT: Chalcopyrite Galena
ASSOCIATED: Quartz Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Paleozoic

GROUP

Unnamed/Unknown Group

FORMATION

Unnamed/Unknown Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Sediment/Sedimentary Rock

HOSTROCK COMMENTS: Area underlain by Cambrian to Devonian sedimentary rocks.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

PHYSIOGRAPHIC AREA: Cassiar Mountains

TERRANE: Cassiar

COMMENTS: Situated just southwest of the Northern Rocky Mountain Trench.

CAPSULE GEOLOGY

This is a poorly documented occurrence of copper-lead mineralization, very roughly located 11.25 kilometres southwest of the mouth of Denetiah Creek (at Gataga River), 10 kilometres south-southeast of Mount Winston in the Kechika Ranges of the Cassiar Mountains (Bulletin 12, page 51).

The area, just southwest of the Northern Rocky Mountain Trench, is underlain by a variety of sedimentary rocks of Cambrian to Devonian age belonging to the Cassiar terrane of the Omineca Belt (Geological Survey of Canada Maps 42-1962, 1712A, 1713A). No detailed mapping has been done in this area to delineate these rocks further.

Virtually no geological description of the occurrence is available, only that quartz veins contain pyrite, chalcopyrite and galena (Bulletin 12, page 51).

BIBLIOGRAPHY

EMPR BULL 12-51
GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/06

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **WHITE BULL, BLACK BULL, BLUE BULL,
RED BULL, WENDY, DALL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L13W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 53 55 N
LONGITUDE: 127 54 35 W
ELEVATION: 900 Metres

UTM ZONE: 09 (NAD 83)

LOCATION ACCURACY: Within 500M

NORTHING: 6529274
EASTING: 562821

COMMENTS: Located in centre of White Bull claim, 14 kilometres north-northwest of junction of Dall and Turnagain rivers, 16 kilometres northwest of Inspector Peak in Cassiar Mountains (Assessment Report 19830, Figure 2.2).

COMMODITIES: Zinc Barite

MINERALS

SIGNIFICANT: Sphalerite

COMMENTS: Very minor sphalerite.

ASSOCIATED: Pyrite Quartz Calcite Barite Siderite

COMMENTS: Vein gangue minerals, mostly.

ALTERATION: Sericite Quartz Pyrite K-Feldspar Limonite

Jarosite Gypsum Sulphur

COMMENTS: Also rare mariposite or fuchsite.

ALTERATION TYPE: Sericitic Silicific'n Potassic Oxidation Leaching

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive Vein

CLASSIFICATION: Hydrothermal Epigenetic

TYPE: E14 Sedimentary exhalative Zn-Pb-Ag

SHAPE: Irregular

COMMENTS: Bedding strikes northwest and dips moderately southwest.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian-Ordovician	Kechika	Undefined Formation	
Ordovician-Silurian	Road River	Undefined Formation	
Middle Cretaceous			Unnamed/Unknown Informal

ISOTOPIC AGE: 113 +/- 4 Ma

DATING METHOD: Potassium/Argon

MATERIAL DATED: Potassic alteration

LITHOLOGY: Quartz Sericite Phyllite
Tuffaceous Phyllite
Dolomite
Rhyodacite Intrusive
Phyllitic Limestone
Graphitic Phyllite
Argillite
Ferricrete
Black Dolomite
Chert

GEOLOGICAL SETTING

TECTONIC BELT: Omineca

TERRANE: Cassiar

COMMENTS: Between Northern Rocky Mountain Trench and Kechika faults.

PHYSIOGRAPHIC AREA: Cassiar Mountains

CAPSULE GEOLOGY

This minor showing is situated in the centre of the White Bull claim, 14 kilometres north-northwest of the junction of the Dall and Turnagain rivers, 16 kilometres northwest of Inspector Peak in the Cassiar Mountains (Assessment Report 19830, Figure 2.2). The area was originally a target for shale-hosted lead-zinc mineralization (Assessment Reports 6839, 11190).

The occurrence lies in an area of moderately deformed Upper Proterozoic and Lower Paleozoic rocks of the Cassiar terrane, between the Northern Rocky Mountain Trench and Kechika dextral strike-slip faults (Geological Survey of Canada Maps 42-1962, 1712A, 1713A). Units include the Ingenika, Atan, Kechika, Road River and Sandpile groups. The White Bull claim is underlain mainly by the

CAPSULE GEOLOGY

Cambro-Ordovician Kechika Group, and possibly some of the Road River Group locally, and a felsic intrusion of probable Cretaceous age (Assessment Report 19830). The property is on the southwest limb of a gently northwest-plunging anticline, the hinge zone of which is approximately 7 kilometres to the northeast. Bedding strikes northwest and dips moderately southwest. The rocks are cut by a few north-northwest striking faults, which dip moderately west to subvertically.

The Kechika Group here comprises a variety of rocks including phyllitic limestone, tuffaceous phyllite or schist, dark grey to black dolostone and graphitic to calcareous phyllite, bedded dolostone, sandy dolostone, argillite, chert and sericite schist. Interbedding of some of the units may be primary or may be the product of tight folding. The potassic, felsic intrusion is pale brown, fine grained and forms rusty-weathering outcrops in the north of the property. It has quartz phenocrysts and may be of rhyodacite composition. It has pervasive silica and potassium feldspar alteration. Dating this material by the potassium-argon method yielded a mid-Cretaceous age of 113 +/- 4 million years for this hydrothermal event (Assessment Report 19830).

Exploration in the area was aimed at areas of surface alteration and vegetation 'kill zones', marked by ferricrete and sulphate-rich bleached zones up to 15 metres thick (Assessment Reports 11190, 19830). These areas are developed discontinuously in the centre of the property for about 1800 metres in length and up to 300 metres in width. They consist of limonite, jarrosite and other iron sulphates, gypsum and locally native sulphur (Assessment Report 19830). Unmineralized argillite and sericitic schist generally lie beneath the alteration caps. Elsewhere, quartz-sericite hydrothermal alteration with up to 3 per cent pyrite may be developed in dolostone, tuffaceous volcanics and argillite. A green mineral, possibly mariposite or fuchsite, was found in a few places.

All the units are cut by unmineralized, massive white quartz and calcite veins. Coarse white barite veins and siderite veins are less common.

Apart from the fine to medium grained, disseminated to massive pyrite and quartz-calcite-pyrite veins generally associated with the quartz-sericite alteration mentioned above, base metal mineralization on the White Bull property is restricted to very local and minor sphalerite (Assessment Report 19830).

In 1995, with Explore B.C. support, Atna Resources Ltd. carried out a program of regional reconnaissance prospecting including geological mapping, soil and rock geochemistry. This program located three areas of significant mineralization and at least one exhalative sedimentary horizon on the west part of the White Bull grid. Most sulphides in this unit are leached away, indicating the need for drilling (Explore B.C. Program 95/96 - G50).

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EMPR EXPL 1978-E254; 1982-351
GSC MAP 42-1962; 1712A; 1713A
WWW <http://www.atna.com>; <http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1996/11/04

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 009**

NATIONAL MINERAL INVENTORY: 94L/11 Fsp 1

NAME(S): **RAR 4**, XENO, KECHIKA RIVER,
RAR 6, REE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L11W
BC MAP:

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)

LATITUDE: 58 41 14 N
LONGITUDE: 127 26 23 W
ELEVATION: 1600 Metres

NORTHING: 6506277
EASTING: 590448

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized stockwork in mafic intrusion, in Rar 4 claim, 6.5 kilometres west of Mount Skook Davidson in Kechika Ranges of Cassiar Mountains (Assessment Report 15220, Map 1).

COMMODITIES: Fluorite Rare Earths Lanthanum Cerium

MINERALS

SIGNIFICANT: Fluorite Unknown
ASSOCIATED: Calcite Biotite Epidote Sulphide
COMMENTS: Large biotite crystals.
COMMENTS: Metasomatic alteration affects margin of host intrusion.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Stockwork Breccia Vein
CLASSIFICATION: Industrial Min. Hydrothermal Epigenetic
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 3000 x 150 Metres STRIKE/DIP: 148/77W TREND/PLUNGE:
COMMENTS: Approximate strike length and maximum width of mineralized intrusion, and its orientation.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Ordovician-Silurian	Sandpile	Unnamed/Unknown Formation	Unnamed/Unknown Informal
Unknown			

LITHOLOGY: Alkalic Mafic Syenite
Malignite
Leucocratic Syenite
Cherty Tuff
Chert
Limestone
Sandstone

HOSTROCK COMMENTS: Mineralized dyke or sill intrudes cherty tuff unit of Sandpile Group.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Cassiar Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Greenschist
COMMENTS: Part of northwest-trending mafic alkalic intrusive-extrusive complex.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis	YEAR: 1986
SAMPLE TYPE: Rock	
COMMODITY	GRADE
Cerium	0.7000 Per cent
Lanthanum	0.9900 Per cent

COMMENTS: Grab sample Rar 1, from Rar 4 claim.
REFERENCE: Assessment Report 15220, Table 1.

CAPSULE GEOLOGY

This showing consists of fluorite and rare earth element mineralization associated with a mafic alkalic intrusive complex. It is located within the Rar 4 claim, in rugged terrain, 6.5 kilometres west of Mount Skook Davidson in the Kechika Ranges of the Cassiar Mountains (Assessment Report 15220).

The geological region is characterized by a folded and thrust-faulted assemblage of siliciclastic and carbonate rock units ranging in age from Upper Proterozoic to Devonian, belonging to the

CAPSULE GEOLOGY

Cassiar terrane (Fieldwork 1988; Geological Survey of Canada Maps 42-1962, 1712A, 1713A). The metamorphic grade is up to lower greenschist facies, and is probably post-mineralization. The oldest rocks are the Ingenika Group, overlain by quartzite of the Lower Cambrian Atan Group. They are overlain by a thick succession of chlorite-sericite schists and phyllites, marble and dolostone correlative with the Cambro-Ordovician Kechika Group. Most of the Rar claims is underlain by Kechika Group phyllites, but within them is a northwest-trending, fault-bounded panel composed of grey limestone and dark green siliceous tuff, chert and sandstone, in an isoclinal anticline cored by phyllitic limestone (Assessment Reports 15220, 16420, 20895, 22746; Fieldwork 1988). This tuff-chert-limestone unit is correlative with the Ordovician-Silurian Sandpile Group, based on fossils in the limestone (Assessment Report 20895).

The mineralization is hosted by an alkalic, mafic syenite or malignite (melanocratic titan-augite syenite) dyke or sill, which intrudes the siliceous tuff and chert unit in the upper, southwestern limb of the overturned isoclinal anticline (Assessment Reports 15220, 16420, 20895). This intrusion is part of a west-northwest trending belt of alkaline igneous rocks, carbonatites and diatremes that has been mapped for at least 20 kilometres. The Rar 4 showing is towards the southeastern end of this belt; the most important deposit in the belt is the Kechika Yttrium prospect (094L 017), 7.5 kilometres to the northwest.

At the Rar 4, the dyke complex is 50 to 150 metres thick and extends southeastwards into the Rar 6 claim for a strike length of about 3 kilometres. Locally it strikes 148 degrees and dips 77 degrees southwest, slightly discordant with respect to the adjacent cherty tuff unit, in which the bedding strikes 132 degrees and dips 52 degrees southwest.

The mafic syenite dyke is dark green, fine to medium grained, moderately foliated and consists of hornblende or pyroxene, chlorite, alkali feldspar and biotite. The margins of the body are marked by brecciation and metasomatic alteration (Assessment Report 20895). The intrusion is strongly fractured and brecciated, and filled with a stockwork of fluorite-calcite-biotite-epidote veins, stringers and cavity fillings, amounting to 8 to 10 per cent by volume. Some veins contain large biotite crystals up to 3 centimetres across. The stockwork veins contain significant values of rare earth elements, highlighted by 0.99 per cent lanthanum and 0.7 per cent cerium, obtained from grab sample Rar 1 (Assessment Report 15220). Associated phyllitic rocks may be radioactive, and tuffs contain rare chrome spinel (Assessment Report 20229).

The upper margin of the dyke, to the southwest, is composed of a coarse-grained leucocratic syenite phase, similarly veined with fluorite-calcite stockworks. Sparsely disseminated sulphides are also present in the intrusion.

A few hundred metres to the west of the mineralized dyke, the cherty tuff unit is cut by several shear zones, up to 3 metres in width, which contain fluorite-bearing veins enriched in rare earth elements. Two samples with aggregate widths of 5 and 6 metres were analysed and found to contain rare earth elements with an average worth (in 1987) of \$182 per tonne (Assessment Report 16420). Later work, however, de-emphasized the potential of these "fluorite shears" (Assessment Report 22746).

A diatreme breccia complex, including agglomerate, tuff and related sedimentary material, occurs in the centre of the intrusion. The diatreme contains rare chrome spinel xenocrysts and chrome mica.

Near the base of the sequence are trachytic or syenitic tuffs or flows, with mylonitic textures, and contain phosphate-rich areas with yttrium mineralization. Much of the rocks in this complex are carbonate rich and may be described as carbonatites. A more detailed petrography of this complicated geology is given in Assessment Reports 18538 and 22746.

In April, 2001, Pacific Ridge Exploration Ltd. optioned the Xeno claims (which covered part of the showings) and followed with further staking. See Rar 7 (094L 017) for further details.

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- EMPR BULL *88, pp. 27-36, 71-74
- EMPR EXPL 1987-C345
- EMPR FIELDWORK 1988, pp. 417-421
- EMPR OF 1992-16, p. 56, 76
- EMPR PF (Fox, M. (1987): Kechika River Rare Earths Project - News release)
- EMR MP CORPFILE (Golden Rule Resources Ltd.; Can America Precious Metals Inc.)

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

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ENERGY AND MINERALS DIVISION

PAGE: 1498
REPORT: RGEN0100

BIBLIOGRAPHY

GSC MAP 42-1962; 1712A; 1713A
PR REL Pacific Ridge Exploration Ltd., April 9, 11, May 2, July 30,
Sept.7, 2001
WWW <http://www.pacificridgeexploration.com/s/Home.asp>;
<http://www.infomine.com/>

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/16

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **MACDUCK**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L04W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 00 30 N
LONGITUDE: 127 53 22 W
ELEVATION: 1510 Metres

NORTHING: 6430177
EASTING: 565627

LOCATION ACCURACY: Within 500M

COMMENTS: Located in approximate centre of MacDuck claim, on ridge 2 kilometres south of Pitman River, 33 kilometres south-southwest of Tucho Lake (Assessment Report 6331, Figure 1).

COMMODITIES: Zinc

MINERALS

SIGNIFICANT: Sphalerite
ASSOCIATED: Pyrite
ALTERATION: Limonite
COMMENTS: Assumed from gossanous alteration.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Paleozoic	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Pyritic Sericite Schist
Pyritic Rhyolite
Volcanic
Greenstone

HOSTROCK COMMENTS: Host rocks probably mainly Devonian to Permian Asitka assemblage. Upper Triassic Stuhini assemblage may be associated.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
COMMENTS: Northeast margin of Stikinia.

PHYSIOGRAPHIC AREA: Spatsizi Plateau

CAPSULE GEOLOGY

This is a minor zinc showing, in the MacDuck claim on a ridge 2 kilometres south of the Pitman River, 33 kilometres south-southwest of Tucho Lake (Assessment Report 6331, Figure 1).

There is not much geological background documented for this occurrence. The MacDuck property is underlain by volcanics and greenstone to the south, and by gossanous, pyritic sericite schist and pyritic rhyolite to the north (Assessment Report 6331, Figure 1; Exploration in British Columbia 1976). From the location, these rocks are apparently within the Asitka tectonic assemblage of the terrane of Stikinia, a Devonian to Permian succession of island arc, basaltic to rhyolitic volcanics, and carbonates and clastic sedimentary rocks (Geological Survey of Canada Maps 1712A, 1713A, 42-1962; Geology of North America, Volume G-2, page 300). Note that the location is only about 1 kilometre east of the contact with the overlying Stuhini assemblage, which is composed of Upper Triassic arc-derived, calc-alkaline andesitic volcanics and volcanoclastics, and it is possible that at least some of the volcanics in the MacDuck claim are in fact part of this assemblage.

Mineralization consists of pyrite and sphalerite in the pyritic sericite schists (Assessment Report 6331; Exploration in British Columbia 1976).

BIBLIOGRAPHY

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EMPR ASS RPT *6331
GSC MAP 42-1962; 1712A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of

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GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

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REPORT: RGEN0100

BIBLIOGRAPHY

North America, Volume G-2).

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/14

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 011**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROUGH, WATERFALL**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094L08E 094L01E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 15 30 N
LONGITUDE: 126 09 17 W
ELEVATION: 1760 Metres

NORTHING: 6460998
EASTING: 666939

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Waterfall showings in Rough 4 claim, 27 kilometres southeast of confluence of Through Creek and Gataga River, 16.5 kilometres east-northeast of Mount New in Muskwa Ranges (Assessment Report 10693, Figure 3b).

COMMODITIES: Zinc Barite Lead Copper

MINERALS

SIGNIFICANT: Sphalerite Barite Galena Chalcopyrite Tetrahedrite
COMMENTS: Sphalerite is pink-red or yellow.
ASSOCIATED: Pyrite Quartz Calcite Gypsum
ALTERATION: Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated Massive Vein
CLASSIFICATION: Sedimentary Epigenetic Hydrothermal Industrial Min.
TYPE: E17 Sediment-hosted barite
SHAPE: Tabular
MODIFIER: Folded Faulted
DIMENSION: 3900 x 30 Metres STRIKE/DIP: 310/50S TREND/PLUNGE:
COMMENTS: Strike length and maximum thickness of sulphide zone at limestone-shale contact, and its attitude.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Earn	Gunsteel	
Silurian-Devonian	Road River	Undefined Formation	

LITHOLOGY: Bedded Barite
Siliceous Barite
Cherty Shale
Cherty Breccia
Limestone
Shale
Calcareous Shale
Siltstone
Quartzite

HOSTROCK COMMENTS: Middle-Upper Devonian Gunsteel Formation is informal. Other mineralization is at contact of Cambrian limestone and younger shale.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in northwest of Gataga mineral district, in Kechika Trough.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1978
SAMPLE TYPE: Grab
COMMODITY: Zinc GRADE: 8.9000 Per cent
COMMENTS: Trench 77-2, highest individual sample.
REFERENCE: Assessment Report 6997, page 34.

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1978

SAMPLE TYPE: Grab

COMMODITY

GRADE

Zinc

4.4000

Per cent

COMMENTS: Actually combined lead-zinc. Sample from trench 77-2, over 10 metres.

REFERENCE: Assessment Report 6997.

CAPSULE GEOLOGY

This barite-lead-zinc prospect is located in the Rough number 4 claim, 27 kilometres southeast of the confluence of Through Creek and Gataga River, 16.5 kilometres east-northeast of Mount New in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 10693, Figure 3b).

The occurrence is in the northwest of the Gataga mineral district, in a belt of Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Exploration and Mining Geology, Volume 1; Geological Survey of Canada Map 1713A). The Gataga mineral deposits are characterized by stratiform sedimentary-exhalative barite-sulphide mineralization. The most important deposit in the area is the Driftpile Creek developed prospect (094K 066), 24 kilometres along strike to the southeast of the Rough prospect.

Like the rest of the region, the Rough claims are underlain by Cambrian to Mississippian rock units which have been deformed into tight to isoclinal, northeasterly-overturned anticlines and synclines, and imbricated by thrust faults. The regional strike is northwest. The oldest rocks present are quartzite and limestone of an unnamed Middle to Upper Cambrian unit. Stratigraphically above this are shale of the Cambro-Ordovician Kechika Group; calcareous and non-calcareous siltstone and shale, and limestone of the Ordovician to Lower Devonian Road River Group; and finally the Devonian to Mississippian Earn Group (Geological Survey of Canada Map 1712A).

The Middle to Upper Devonian Gunsteel Formation (informal name) of the Earn Group hosts barite-lead-zinc mineralization at the Driftpile Creek deposit, and can be traced along the strike of a synclinorium into the Rough property (Preliminary Map 38; Geological Survey of Canada Paper 88-1E). Here, it is composed of bluish-grey weathering carbonaceous shale, siliceous shale and cherty mudstone, siltstone and minor limestone. Locally the shale contains horizons of nodular barite or bedded, highly siliceous barite; a strong lead soil anomaly is clearly associated with these baritic bands but no substantial sulphide mineralization has been found (Assessment Reports 6997, 8169). The outcrop of the baritic shale and that of the Gunsteel Formation in general is quite irregular due to the complexity and plunge reversals of the folds, and to truncation by faults and thrusts, and this lack of continuity may limit the economic potential of the unit (Assessment Report 10693).

These Devonian baritic shales also outcrop along strike in the Sic 1 claim, 3 kilometres to the southeast of the Rough 4 claim. Here, too, they are associated with lead and zinc soil anomalies, but without obvious sulphides (Assessment Report 10083).

Although some of the exploration at the Rough was focussed on the baritic facies of the Gunsteel Formation, the initial and principal interest in this area was actually on a zone, lower in the stratigraphy, of disseminated to massive sphalerite-pyrite-galena mineralization in cherty shale and breccia at the partially thrust-faulted contact between Cambrian limestone and younger shales, centred on the "Waterfall showings". This horizon was judged to be on the faulted, overturned (southwestern) limb of a syncline (Assessment Report 10693). It strikes approximately 310 degrees and dips about 50 degrees southwest. The shale has been interpreted as Kechika Group (Assessment Report 6997) or alternatively, Road River Group (Assessment Report 8169).

This mineralized zone is generally about 10 metres thick but may reach 30 metres, and has been traced for 3.9 kilometres. However, high grade mineralization is erratic (Assessment Report 6997). The sphalerite is pink-red or yellow, and fine grained and appears to have both syngenetic and epigenetic characteristics, the latter shown by veining, and replacement and recrystallization textures (Assessment Reports 6454; 6997, pages 9, 18). Galena is subordinate; small amounts of gypsum have been found. A sample of black cherty shale from trench 77-2 assayed 4.4 per cent combined lead-zinc over 10 metres (Assessment Report 6997). Individual samples range up to 8.9 per cent zinc.

This stratabound mineralization has been remobilized by faulting and hydrothermal activity, as indicated by quartz veins containing

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CAPSULE GEOLOGY

coarse sphalerite, and stringers of pyrite (Assessment Report 6997). In addition, quartz veins containing calcite and barite occur locally in the Road River Formation (Assessment Reports 6997, 10693). Very minor chalcopryrite, tetrahedrite and azurite are present locally in veins (Assessment Reports 6997, 10693).

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EMPR MAP 38
GSC MAP 42-1962; 1712A; 1713A
GSC P 88-1E, pp. 1-12
EMG 1992, pp. 1-20
Falconbridge File
WWW <http://www.infomine.com/>
EMPR OF 2000-22
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/01

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 011**

MINFILE NUMBER: **094L 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **SYNC**, NORTH SYNC

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L08W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 22 33 N
LONGITUDE: 126 26 15 W
ELEVATION: 1810 Metres

NORTHING: 6473408
EASTING: 649855

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized outcrops, 6.5 kilometres southwest of confluence of Through Creek and Gataga River in Muskwa Ranges (Assessment Report 7604, Figure 8).

COMMODITIES: Lead Copper

MINERALS

SIGNIFICANT: Galena
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Stratabound
CLASSIFICATION: Replacement Hydrothermal Epigenetic
DIMENSION: 800 Metres STRIKE/DIP: 315/85W
COMMENTS: Strike length of mineralized outcrops. Bedding attitude.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cambrian	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Cambrian-Ordovician	Kechika	Undefined Formation	

LITHOLOGY: Limestone
Shale

HOSTROCK COMMENTS: Limestone host rock is probably Middle to Upper Cambrian carbonate unit, but overlying Kechika Group may be involved.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Just northeast of the Northern Rocky Mountain Trench.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

This minor lead showing is situated in the Sync 2 claim, at the head of a tributary of Through Creek, 6.5 kilometres southwest of the confluence of Through Creek and Gataga River (Assessment Report 7604, Figure 5).

The occurrence lies 12 kilometres northeast of the Northern Rocky Mountain Trench, which coincides with the Kechika River valley. The region is underlain by folded and thrust-faulted Cambrian to Mississippian sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Map 42-1962, 1712A, 1713A).

The North Sync property is underlain by bands of limestone and shale which alternate across strike. Bedding strikes about 315 degrees, and dips very steeply southwest. By extrapolation with Ministry mapping 12 kilometres to the northwest (Fieldwork 1994, page 280; Open File 1995-4), the limestone and shale probably belong to a Middle to Upper Cambrian carbonate unit, or to the overlying Upper Cambrian to Lower Ordovician Kechika Group, which consists of interbedded calcareous shale and limestone (Geological Survey of Canada Paper 1988-1E). It is also possible that both units are present and are structurally repeated by tight folding or thrusting, but there is not enough information to tell.

Several outcrops containing galena and rare malachite were found along strike for about 800 metres. Massive galena forms fracture fillings or replacement bodies in the limestone within a few metres of the shale contact (Assessment Report 7604).

Superficially, this setting is similar to that at the Rough prospect (094L 011), 21 kilometres to the southeast.

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GSC P 1988-1E, p. 1

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/30

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **X, XK, XW,
XM, XN, XJ,
XL, XG, BLUE,
SKY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L01E
BC MAP:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)

LATITUDE: 58 11 21 N
LONGITUDE: 126 06 38 W
ELEVATION: 1500 Metres

NORTHING: 6453412
EASTING: 669859

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized veins in northwest corner of XW claim, 5.5 kilometres north of Braid Creek, 17 kilometres east-northeast of Bighorn Mountain in Muskwa Ranges (Assessment Report 9341, drawing 6 of A).

COMMODITIES: Barite Zinc

MINERALS

SIGNIFICANT: Barite Sphalerite
ASSOCIATED: Quartz Calcite
COMMENTS: Vein or breccia vein gangue minerals.
ALTERATION: Smithsonite Hydrozincite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Devonian

DEPOSIT

CHARACTER: Stratiform Massive Vein Breccia
CLASSIFICATION: Sedimentary Syngenetic Hydrothermal Industrial Min.
TYPE: E17 Sediment-hosted barite E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Irregular
DIMENSION: Metres STRIKE/DIP: 320/ TREND/PLUNGE:
COMMENTS: Approximate strike of baritic strata; dip variable.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Earn	Gunsteel	

LITHOLOGY: Baritic Shale
Pyritic Shale
Carbonaceous Siliceous Shale
Siltstone
Chert Pebble Conglomerate
Chert Pebble Sandstone
Cherty Argillite
Chert

HOSTROCK COMMENTS: Gunsteel Formation is informal name; age is Middle to Upper Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Situated in northwest of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

This barite-zinc occurrence is situated 5.5 kilometres north of Braid Creek, 17 kilometres east-northeast of Bighorn Mountain, in the mountainous Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 9341, drawing 6 of A).

The occurrence lies in the northwest of the Gataga mineral district, in a belt of Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, the southeastern arm of the Selwyn Basin (Exploration and Mining Geology, Volume 1, page 1). These rocks lie just northeast of the Northern Rocky Mountain Trench and belong to Ancestral North America (Geological Survey of Canada Map 1713A). The Gataga mineral deposits are characterized by stratiform sedimentary exhalative barite-sulphide mineralization, best represented in this area by the Driftpile Creek developed prospect (094K 066), 18 kilometres to the southeast.

The X series of claims are underlain mostly by Ordovician to Devonian rocks (Preliminary Map 38; Assessment Report 9341; Geological Survey of Canada Maps 42-1962, 1712A). The Ordovician to Lower Devonian Road River Group here consists of grey dolomitic

CAPSULE GEOLOGY

siltstone and shale, and dolostone and limestone. More important is the stratigraphically overlying Middle to Upper Devonian Gunsteel Formation (informal name) of the Devono-Mississippian Earn Group, the same unit that hosts the Driftpile Creek deposit, which was dated by fossils. This unit occupies narrow, northwest-trending synclines within the older rocks, and comprises blue-grey weathering, black carbonaceous and siliceous shale and siltstone, chert-pebble conglomerate or sandstone, cherty argillite and radiolarian chert. The shale is locally pyritic. The folds are overturned towards the northeast. At least one large southwest-dipping thrust fault passes through the area, forming the southwestern boundary of the Earn Group; the Cambrian Atan Group forms the hanging-wall.

Within the Gunsteel Formation are interbeds of baritic shale, marked by white nodules, laminae or small stringers (about 3 centimetres long) of barite, or rarely massive bedded barite (Assessment Reports 6689, 8172, 9341). This facies may be the same as that which hosts stratiform lead-zinc mineralization elsewhere in this belt, and was the focus of exploration on this property (Assessment Report 8172). High zinc soil anomalies reinforce the correlation. However, no massive sulphide mineralization has been found in place, except for a 30-centimetre thick band of massive pyrite in one locality (Assessment Report 8172).

The occurrence is centred, roughly in the middle of the property, on an outcrop of sphalerite-bearing calcite veins in the northwest corner of the XW claim, in black carbonaceous shale. Apart from this and the widespread baritic shale, mineralization is restricted to zinc carbonate minerals, smithsonite or hydrozincite, in tufa or other oxidized outcrops or gossans, or in quartz-calcite breccia veins (Assessment Reports 6689, 8172).

BIBLIOGRAPHY

EMPR EXPL 1977-E219; 1978-E252; 1979-270, 330; 1980-449
EMPR ASS RPT 6689, 8172, *9341
EMPR MAP 38
GSC P 88-1E, pp. 1-12
GSC MAP 42-1962; 1712A; 1713A
EMG 1992, pp. 1-20
EMPR OF 2000-22

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/31

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 014**

NATIONAL MINERAL INVENTORY:

NAME(S): **FROG 1**

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094L03E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 01 27 N
LONGITUDE: 127 09 30 W
ELEVATION: 1650 Metres

NORTHING: 6432884
EASTING: 608778

LOCATION ACCURACY: Within 500M

COMMENTS: Located in approximate centre of Frog 1 claim, 2.5 kilometres southeast of confluence of Pitman and Frog rivers in Cassiar Mountains (Assessment Report 16770, Figure 3).

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Bornite Gold Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Podiform
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: 1 Metres STRIKE/DIP: 020/ TREND/PLUNGE: /
COMMENTS: Approximate strike of veins, which are up to 50 centimetres wide.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Pitman Batholith

LITHOLOGY: Foliated Quartz Diorite
Foliated Granodiorite

HOSTROCK COMMENTS: Pitman Batholith is part of Guichon Plutonic Suite of Quesnellia.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Cassiar Mountains
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE:	SAMPLE	REPORT ON:	N
CATEGORY:	Assay/analysis	YEAR:	1986
SAMPLE TYPE:	Grab		
COMMODITY		GRADE	
Silver		387.0000	Grams per tonne
Gold		14.4000	Grams per tonne
Copper		34.2000	Per cent

COMMENTS: Preliminary sample (Frog #1.A, 1986), also found to contain free gold.
REFERENCE: Assessment Report 16670.

CAPSULE GEOLOGY

This gold-silver-copper prospect is situated in steep terrain in the Frog 1 claim, 2.5 kilometres southeast of the confluence of the Pitman and Frog rivers in the Cassiar Mountains of Northern British Columbia (Assessment Report 16770, Figure 3).

Based on its location, the occurrence is in the Pitman Batholith, a large Early Jurassic intrusion that is part of the Guichon Plutonic Suite in the terrane of Quesnellia. It is composed of well foliated quartz diorite and granodiorite (Geological Survey of Canada Maps 42-1962, 1712A, 1713A; Geological Society of America, Geology of North America, Volume G-2, page 500). The rock is characterized by large prismatic hornblende grains and white plagioclase. Much of the pluton is metamorphosed to greenschist grade, especially near faults.

Mineralization occurs primarily in quartz veins, which are generally 20 to 50 centimetres wide, and strike north-northeast and dip west (Assessment Report 16770). Mineralization is also present in the surrounding granodiorite. The veins contain bornite and malachite in large massive blebs, and minor chalcopyrite.

Preliminary assay results indicated values of 14.4 grams per

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1509
REPORT: RGEN0100

CAPSULE GEOLOGY

tonne gold, 387 grams per tonne silver, and 34.2 per cent copper (Assessment Report 16770). One sample was screened and found to contain coarse gold. Later samples yielded high copper and silver values of 43.5 per cent and 319 grams per tonne, respectively, but relatively little gold (Assessment Report 16770).

BIBLIOGRAPHY

EMPR EXPL 1987-C344
EMPR ASS RPT *16770
GSC MAP 42-1962; 1712A; 1713A
GSA (Gabrielse, H. and Yorath, C.J. (Editors) (1991): Geology of North America, Volume G-2).

DATE CODED: 1995/02/14
DATE REVISED: / /

CODED BY: CJR
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094L 015**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOLO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 37 55 N
LONGITUDE: 126 43 10 W
ELEVATION: 1475 Metres

NORTHING: 6501320
EASTING: 632403

LOCATION ACCURACY: Within 500M

COMMENTS: Located on baritic shale outcrop, on ridge 5 kilometres northeast of Brownie Mountain, 9 kilometres northwest of Bluff Creek in Muskwa Ranges (Assessment Report 7292, Figure 3).

COMMODITIES: Barite Zinc Iron Phosphorus

MINERALS

SIGNIFICANT: Barite
COMMENTS: Barite forms nodules, rosettes or is disseminated.
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Stratabound Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite
DIMENSION: 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Thickness of baritic horizon at one locality. Bedding strikes northwest and dips moderately southwest.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Earn	Gunsteel	

LITHOLOGY: Baritic Shale
Carbonaceous Siliceous Shale
Carbonaceous Siliceous Slate
Carbonaceous Siliceous Siltstone
Carbonaceous Siliceous Sandstone
Pyritic Chert
Chert
Ferricrete

HOSTROCK COMMENTS: Gunsteel Formation (informal name) is Middle to Upper Devonian. Baritic rocks are close to base of formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

The Solo showing has been created to draw attention to a few minor barite occurrences in the area southwest of Netson Lake, 5 kilometres northeast of Brownie Mountain in the Muskwa Ranges of the Northern Rocky Mountains. It may be of interest because barite in this geological setting is locally associated with stratiform lead-zinc mineralization in the region.

The area lies at the northwestern extremity of the Gataga mineral district, in a belt of Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Map 38; Exploration and Mining Geology, Volume 1; Geological Survey of Canada Map 1713A). This region, which is just northeast of the Northern Rocky Mountain Trench, is underlain by Cambrian to Devonian-Mississippian sedimentary rock units which have been deformed into tight, northeasterly-overtaken folds and imbricated by thrust faults (Fieldwork 1994, Open File 1995-4; Geological Survey of Canada Map 1712A, Paper 88-1E). The general strike is northwest, and the dominant dip is moderately to steeply southwest.

The Gataga mineral deposits are characterized by stratiform sedimentary-exhalative barite-sulphide mineralization, particularly in the Middle to Upper Devonian Gunsteel Formation (informal name) of the Devonian-Mississippian Earn Group. Recent Ministry mapping indicates that at least two narrow, thrust-bounded belts of Earn Group rocks extend into the area southwest of Netson Lake, consisting

CAPSULE GEOLOGY

mainly of black, carbonaceous shale or slate, siltstone and sandstone, and chert (Fieldwork 1994, Open File 1995-4). In the course of this work, barite was found in Earn Group slates on a small creek 4 kilometres southwest of the southern end of Netson Lake (Open File 1995-4, map sample number 4).

The baritic horizon is approximately 1 metre thick and contains ovoid nodules of barite from 0.1 to 0.5 centimetre across, locally forming up to 30 per cent of the slate. Thin layers of very fine grained pyrite, pyritic cherty lenses, and coarse authigenic pyrite are associated. The host rock, which lies about 25 metres stratigraphically above the base of the Earn, is similar to 'blebby' barite and exhalative pyrite horizons seen at the Driftpile Creek developed prospect (094K 066), 80 kilometres to the southeast (Fieldwork 1994, page 292). This barite showing, which is occurrence on #12 (Field Number FFE94-25-5) on Geoscience Map 1998-9, assayed 10.6 per cent barite and 4.4 per cent iron.

The Solo showing is actually centred on, and named after, another occurrence of barite, 1.25 kilometres away to the west-southwest, near the crest of the ridge, which was found during an investigation of zinc anomalies on the Solo property to the northwest (Assessment Report 7292, Figure 3). Barite forms nodules and rosettes in black siliceous shale. This locality is within the same belt of Earn Group as the aforementioned occurrence, though apparently it is in another, overlying thrust panel (Open File 1995-4). This allows the possibility that it is also near the base of the Earn Group. No sulphide mineralization was found here nor on the rest of the Solo property (Assessment Report 7292).

About 500 metres to the northwest of the Solo locality is ferricrete which assayed 0.723 per cent zinc, 0.568 percent phosphorus, 5.36 per cent iron and 0.42 per cent barite (Geoscience Map 1998-9).

Open File 1995-4 shows two more, minor barite occurrences 2 to 3 kilometres away, on the northeast slopes of the next ridge to the southwest (map sample numbers 2 and 5). These are also in the Earn Group, but in a still higher thrust panel. The Earn Group is very narrow here. Barite is finely disseminated in siliceous shale. See FFE94-18-8 (094L 027).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT *7292
EMPR EXPL 1978-E253
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
GSC P 88-1E, pp. 1-12
EMG 1992, pp. 1-20
EMPR OF 2000-22

DATE CODED: 1995/02/03
DATE REVISED: 1998/12/21

CODED BY: CJR
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **SMOKE**, HORN 1

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L14E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 51 52 N
LONGITUDE: 127 05 36 W
ELEVATION: 1440 Metres

NORTHING: 6526524
EASTING: 609963

LOCATION ACCURACY: Within 500M

COMMENTS: Located 10 kilometres east of Kechika River and 13 kilometres north of Terminus Mountain, in Muskwa Ranges (Assessment Report 9467, Figure 2). Location is of sample from Geoscience Map 1998-9.

COMMODITIES: Zinc Barite Silver

MINERALS

SIGNIFICANT: Sphalerite Barite
ASSOCIATED: Pyrite
COMMENTS: Zinc oxide minerals are reported.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Ordovician-Silurian	Road River	Undefined Formation	
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Chert Shale Dolomite Breccia
Dolomite
Shale
Siltstone
Chert
Limestone
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Situated just east of the Northern Rocky Mountain Trench.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

This zinc showing is situated 10 kilometres east of the Kechika River, 13 kilometres north of Terminus Mountain in the Muskwa Ranges of the Northern Rocky Mountains (Assessment Report 9467, Figure 2). The area was surveyed as the Smoke claim by Noranda Exploration Company, Limited in 1980 and staked in 1996 as the Horn claims by Cominco Ltd.

The area lies immediately east of the Northern Rocky Mountain Trench, which here coincides with the Kechika River valley. The occurrence is in a northwest-trending belt consisting dominantly of the Devonian and Mississippian Earn Group (Geological Survey of Canada Map 42-1962, 1712A). This is a varied unit composed mostly of chert-pebble conglomerate and quartz sandstone, and blue-black siliceous shale and siltstone. The property is underlain by a strongly deformed sequence of grey to brown dolostone, shale, siltstone and chert of the Silurian-Devonian Road River Group (Geoscience Map 1998-9).

A sphalerite-barite rich breccia cross cuts chert, cherty argillite, and argillaceous limestones of the Road River Group near the top of the ridge about 13 kilometres north of Terminus Mountain. The breccia is marked by gossanous pyritic sections. It is about 10 metres long and from 0.5 metre to 3 metres wide. Breccia clasts are from 0.1 centimetre to 20 centimetres across and are composed of chert, limestone and argillite. The matrix is composed of rusty iron carbonate, calcite and barite. Pyrite is finely disseminated and sphalerite seen under the microscope. The breccia is postulated to be a solution breccia (Bulletin 107, p. 108).

A gossanous, 3-metre wide zone of sphalerite, zinc oxide and

CAPSULE GEOLOGY

barite occurs in chert-shale-dolomite breccia (Assessment Report 9467). The ground was explored with a soil survey but the results were disappointing. A sample taken in 1995, assayed 0.2136 per cent zinc and 2.07 per cent barite; another assayed 3.39 per cent zinc, 0.984 per cent barite and 0.055 per cent cadmium (Geoscience Map 1998-9). A grab sample by Cominco gave 5.63 per cent zinc, 24.5 grams per tonne silver, 0.034 per cent copper and 0.12 per cent barium. Another sample assayed lower in metals but 3.24 per cent barium (Assessment Report 25013).

BIBLIOGRAPHY

EM BULL 107, pp. 107-108
EM GEOS MAP 1998-9
EMPR ASS RPT 9467, *25013
EMPR EXPL 1981-44
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1995/01/27
DATE REVISED: 2003/02/10

CODED BY: CJR
REVISED BY: MPS

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 017**

NATIONAL MINERAL INVENTORY: 94L/12 Ree 1

NAME(S): **KECHIKA YTTRIUM**, XENO, RAR 7,
RIDGE ZONE, RAR 5, REE,
REO

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094L12E 094L11W
BC MAP:
LATITUDE: 58 43 31 N
LONGITUDE: 127 32 42 W
ELEVATION: 2210 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6510377
EASTING: 584254

COMMENTS: Located on Ridge Zone, in Rar 7 claim, 13 kilometres northeast of northern end of Dall Lake, 13 kilometres northwest of Mount Skook Davidson in Cassiar Mountains (Assessment Report 20229, Figures 7, 10b).

COMMODITIES: Yttrium Rare Earths Phosphate Fluorite Dysprosium
 Gadolinium Lead Molybdenum Thorium Tantalum

MINERALS

SIGNIFICANT: Apatite Monazite Phosphate Xenotime
ASSOCIATED: Calcite Quartz Pyrite Ankerite Fluorite
 Spinel Galena Molybdenite

COMMENTS: Galena and molybdenite are minor. Chrome spinel is rare.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Stockwork Disseminated Podiform
CLASSIFICATION: Magmatic Diatreme Hydrothermal Industrial Min.
TYPE: N01 Carbonatite-hosted deposits
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 350 x 200 x 50 Metres STRIKE/DIP: 315/40E TREND/PLUNGE:
COMMENTS: Approximate thickness, and maximum area of Ridge Zone. Approximate attitude of layering in igneous complex.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Ordovician-Silurian	Sandpile	Undefined Formation	Unnamed/Unknown Informal
Ordovician-Silurian			

DATING METHOD: Fossil

LITHOLOGY: Quartz Feldspar Carbonate Phyllite
Phosphatic Phyllite
Calcareous Tuff
Trachytic Crystal Lapilli Tuff
Carbonatite
Diatreme Breccia
Diatreme Dike
Mafic Syenite
Kimberlite Diatreme Dike
Heterolithic Volcanic Breccia

HOSTROCK COMMENTS: Intrusive-extrusive complex within rocks equivalent to Sandpile Group. Age based on apparent syn-depositional features with host carbonates.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Cassiar Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Greenschist
COMMENTS: Fault-bounded panel in mainly Lower Paleozoic assemblage.

INVENTORY

ORE ZONE: RIDGE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Chip
COMMODITY: Yttrium GRADE: 0.8900 Per cent
COMMENTS: Sample in trench, over 1 metre.
REFERENCE: Assessment Report 18538, page 6.

CAPSULE GEOLOGY

The Kechika Yttrium prospect comprises yttrium and rare earth element mineralization associated with a mafic alkalic igneous complex. It is located in the Rar and Ree claims, in rugged terrain, 13 kilometres northeast of the northern end of Dall Lake, 13 kilometres northwest of Mount Skook Davidson in the Kechika Ranges of the Cassiar Mountains (Assessment Report 20229, Figures 7, 10b).

The geological region is bounded to the northeast by the Burnt Rose and Northern Rocky Mountain Trench faults, and to the southwest by the Kechika Fault. It is characterized by a folded and faulted assemblage of mainly siliciclastic and carbonate rock units ranging in age from Upper Proterozoic to Devonian, belonging to the Cassiar terrane (Bulletin 88; Geological Survey of Canada Maps 42-1962, 1712A, 1713A). The metamorphic grade is up to lower greenschist facies, and is probably post-mineralization. The oldest rocks are the Ingenika Group, overlain by quartzite of the Lower Cambrian Atan Group. They are overlain by a thick, southwest-dipping succession of chlorite-sericite schists and phyllites, marble and dolostone correlative with the Cambro-Ordovician Kechika Group.

Most of the Rar and Ree claims is underlain by Kechika Group phyllites, but within them is a northwest-trending, fault-bounded panel composed of massive grey limestone, dolostone, dark green siliceous tuff, chert, and pink and black quartzitic sandstone and argillite (Assessment Reports 15220, 16420, 20895, 22746; Bulletin 88; Fieldwork 1988). This tuff-chert-limestone unit outlines a gently northwest-plunging, overturned antiformal, and is correlated with the Ordovician-Silurian Sandpile Group, based on fossils in the limestone (Assessment Report 20895).

The mineralization is hosted by an alkalic intrusive-extrusive igneous complex in the tuff-chert-limestone unit. This complex forms a west-northwest trending belt of probably cogenetic syenites, trachytic volcanics, carbonatites and diatremes that has been mapped for at least 20 kilometres. It ranges in surface width from a few hundred metres to a few kilometres. The mineralization within it has been assigned to two MINFILE occurrences: the Rar 4 showing, in a mafic syenite, is towards the southeastern end of the belt, and the more important Kechika Yttrium prospect covers an area in the centre of the belt.

This central portion of the belt is dominated by a 350-metre thick, moderately southwest-dipping sequence of moderately to strongly sheared igneous and pyroclastic rocks; the rather complex geology is described in detail in Bulletin 88, pages 27 to 36, and in several assessment reports. This area includes the "Ridge Zone", on which the occurrence is centred. The base of the sequence comprises calcareous rocks with minor interbeds of grey aplite, fine to coarse grained pyroclastic breccia, and graded, laminated layers containing flattened pumice fragments. These rocks were interpreted as calcareous crystal, lapilli and welded tuffs, with related sediments and minor sills.

Above this are white to pink-weathering rocks and phyllite containing quartz, potassium feldspar, apatite, carbonate (dolomite and lesser calcite, magnesite) and sericite. Yttrium minerals are also present in this subunit, apparently related to phosphatic zones several tens of metres long and up to a few metres thick, which are rich in apatite (up to 25 per cent) and to a lesser extent the rare-earth phosphates monazite and xenotime. Trenching and sampling across these zones yielded values of 0.89 per cent yttrium (1.13 per cent Y2O3) over 1 metre, and high values of dysprosium and gadolinium (Assessment Report 18538). The phosphate minerals also contain a significant amount of thorium, some rock samples with up to 0.33 per cent thorium (Bulletin 88, pages 32, 33). Radioactivity was observed to be elevated over some horizons, which may be explained by this mineralogy (Assessment Reports 18538, 20229). The rocks in this subunit are foliated to mylonitic. Field evidence indicates that they are conformable with bedding in the host carbonates; they were tentatively interpreted as trachytic or syenitic tuffs or flows. The assessment reports cited contain extensive geochemical analyses.

Near the top of the sequence are intrusive, dark green mafic syenites, which are structurally overlain by heterolithic, probably volcanic breccias formed of various sedimentary and igneous fragments (but not mafic syenite). Their tuffaceous matrix varies from pumice-rich to calcareous. Both the fragments and matrix contain fluorite and pyrite as disseminations, hairline fracture-fillings or as a replacement.

In dolostone and dolomitized limestone about 2 kilometres southeast of the Ridge zone, in the Rar 5 claim, there is a diatreme breccia pipe composed of xenoliths of a variety of igneous and sedimentary (mostly quartzite and carbonate) rock types and rare chrome spinel xenocrysts, in a pale green, carbonate-rich tuffitic matrix. It is cut by a rare-earth bearing fluorite-calcite

CAPSULE GEOLOGY

stockwork, locally with pyrite and minor galena and molybdenite, and by carbonatite dykes locally (Assessment Reports 15220, 18538, 20229). The value of the rare-earth bearing stockwork material was estimated at \$440 per tonne (Assessment Report 16420, page 8). The diatreme is extremely deformed and foliated at its contacts. The carbonatites, which also occur in the Ridge zone, are generally fine grained, with a distinctive orange-brown weathering, and are rich in dolomite or ankerite. They are typically less than 1 metre thick and cut both the alkaline suite and the carbonate hostrocks, and so appear to be among the youngest components of the complex.

At the north end of the property (Ree 1 to 4 claims), about 8 kilometres northwest of the Ridge zone, a thick section of alkalic igneous rocks is exposed, mostly agglomerate and tuff, trachyte, aplite, chlorite schist and phyllite. They are similar to the lithologies in the rest of the property but no significant mineralization is documented in this area (Assessment Reports 20229, 20895).

In April 2001, Pacific Ridge Exploration Ltd. optioned the property and followed up with further staking. An exploration crew was mobilized to the property in July 2001 to do mapping and sampling with the intention of prioritizing diamond drill targets. Pacific Ridge will also be assaying for tantalum, which has been visually noted but no assayed for.

A diatreme breccia stockwork, 3 kilometres southeast of the Rar 7 zone, has been indentified as a kimberlite with potential for diamonds. In March 2002, reported results of a small, 32 kilogram surface sample, collected from one location within an approximate 2.5 kilometre-long intermittently exposed kimberlitic diatreme dike that varies in width from a few metres to over 50 metres. The kimberlitic sample produced one cuboid microdiamond fragment with dimensions of 0.38 by 0.30 by 0.25 millimetres (Pacific Ridge Exploration Ltd., Press Release March 13, 2002).

BIBLIOGRAPHY

EM EXPL 2001-1-9
EMPR ASS RPT 15220, *16420, *18538, *20229, 20895, 22746
EMPR BULL *88, pp. 27-36, 71-74
EMPR EXPL 1987-C345
EMPR FIELDWORK 1988, pp. 417-421
EMPR OF 1990-32; 1992-16, p. 56, 76
EMPR PF (Fox, M. (1987): Kechika River Rare Earths Project - News release)
EMR MP CORPFILE (Golden Rule Resources Ltd.; Can America Precious Metals Inc.)
GSC MAP 42-1962; 1712A; 1713A
GCNL #11, Jan. 17, 1989
PR REL Pacific Ridge Exploration Ltd., April 9, 11, May 2, July 30, Sept.7, 2001
WWW <http://www.pacificridgeexploration.com/s/Home.asp>

DATE CODED: 1988/10/27
DATE REVISED: 1995/02/18

CODED BY: JP
REVISED BY: CJR

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLUFF CREEK, RED BLUFF, SONNY, TERRY, NETSON, SPLIT, TOP, BROWNIE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10E
BC MAP:
LATITUDE: 58 33 57 N
LONGITUDE: 126 38 00 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6494135
EASTING: 637660

COMMENTS: Located on gossan in lower Bluff Creek, 6.5 kilometres northeast of Gataga River, 7.5 kilometres east-southeast of Brownie Mountain in Muskwa Ranges (Open File 1995-4; Assessment Report 21980, Figure 3).

COMMODITIES: Zinc Nickel Barite Iron

MINERALS

SIGNIFICANT: Barite Unknown
COMMENTS: Barite is minor. Zinc and nickel have accumulated in ferricrete and calcrete.
ASSOCIATED: Pyrite Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound
CLASSIFICATION: Residual
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian	Earn	Gunsteel	

LITHOLOGY: Ferricrete
Gossan
Tufa
Bedded Barite
Carbonaceous Siliceous Slate
Carbonaceous Siliceous Siltstone

HOSTROCK COMMENTS: Gunsteel Formation (informal name) is Middle to Upper Devonian. Showing is centred on gossan rather than original mineralization.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: At northwest end of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Although no significant bedrock mineralization is apparent, this occurrence has been created to represent a wide area, straddling lower Bluff Creek, of gossaneous outcrops and anomalous multi-element rock, soil and silt geochemical results. The geochemical signature was considered by explorationists to be indicative of both lead-zinc and nickel-zinc massive sulphide ('sedex') potential (Assessment Reports 21160, 21980).

The occurrence is centred on a gossan on the north side of the creek, roughly in the middle of the anomalous area (Open File 1995-4; Assessment Report 21980, Figure 3). It is 6.5 kilometres northeast of the Gataga River and 7.5 kilometres east-southeast of Brownie Mountain in the Muskwa Ranges of the Northern Rocky Mountains.

The area lies at the northwestern extremity of the Gataga mineral district, in a belt of Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Map 38; Exploration and Mining Geology, Volume 1; Geological Survey of Canada Map 1713A). The Gataga mineral deposits are characterized by stratiform sedimentary-exhalative barite-sulphide mineralization, particularly in the Middle to Upper Devonian Gunsteel Formation (informal name) of the Devono-Mississippian Earn Group.

This region, which is just northeast of the Northern Rocky Mountain Trench, is underlain by Cambrian to Devono-Mississippian sedimentary rock units which have been deformed into tight, northeasterly-overturned folds and imbricated by thrust faults (Fieldwork 1994, Open File 1995-4; Geological Survey of Canada Map

CAPSULE GEOLOGY

1712A, Paper 88-1E). The general strike is northwest, and the dominant dip is moderately to steeply southwest. The oldest rocks in the immediate area are siliciclastics and limestone of an unnamed Middle to Upper Cambrian unit. Stratigraphically above these are slate and limestone of the Cambro-Ordovician Kechika Group; calcareous and non-calcareous siltstone and slate, and carbonate of the Ordovician to Lower Devonian Road River Group; and finally carbonaceous and siliceous slate and siltstone of the Earn Group.

The lower Bluff Creek valley cuts westwards through all these stratigraphic units; in fact, they are partly repeated in at least six thrust panels. Of interest is the Earn Group, probably mostly Gunsteel Formation, which outcrops in at least two narrow, mainly thrust-bounded belts over a width of 2 kilometres, halfway between the Netson Creek valley and the Gataga River. This belt is not well exposed but is marked by a number of ferricrete outcrops, gossans, and locally calcrete or tufa deposits (some of them may actually rest on pre-Earn, Road River Group rocks). These deposits tend to have much more elevated values of zinc and nickel than lead or copper, reflecting the greater solubilities of those elements. High zinc values are also reported for some slate or shale samples in the vicinity, but without more detailed descriptions it cannot be assumed that they were not contaminated by the metal-enriched groundwaters (Assessment Report 7291). Outcrops of unaltered slate or siltstone are not mineralized except for disseminated pyrite, although bedded barite or small nodules of barite have been found in the Earn Group in a few places (Assessment Report 9468).

Work in 1990 and 1991 concentrated on the nickel rather than barite-lead-zinc potential of the area, because of the low barium anomalies. Comparisons were drawn between the geochemical characteristics here and at the Nick polymetallic massive sulphide deposit in central Yukon, situated in the Earn Group just above the contact with the Road River Group (Assessment Reports 21160, 21980; Fieldwork 1994, page 292).

A sample of ferricrete assayed 5.19 per cent zinc, 0.336 per cent nickel, 0.364 per cent magnesium, 5.23 per cent iron and 0.032 per cent cadmium (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 7291, *9468, 10700, 21160, *21980
EMPR EXPL 1978-E253; 1982-351
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR MAP 38
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
GSC P 88-1E, pp. 1-12
EMG 1992, pp. 1-20
Falconbridge File
EMPR OF 2000-22

DATE CODED: 1995/02/02
DATE REVISED: 1998/12/21

CODED BY: CJR
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAT**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 43 16 N
LONGITUDE: 126 49 28 W
ELEVATION: 1600 Metres

NORTHING: 6511043
EASTING: 625986

LOCATION ACCURACY: Within 500M

COMMENTS: Located on ridge in the Mat claim group, 5.5 kilometres west-northwest of northern end of Netson Lake, 10 kilometres northeast of Gataga Mountain in Muskwa Ranges (Assessment Report 8379, Map 1). Location is of showing on Geoscience Map 1998-9.

COMMODITIES: Barite Strontium

MINERALS

SIGNIFICANT: Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian	Earn	Gunsteel	

LITHOLOGY: Barite
Carbonaceous Siliceous Slate
Carbonaceous Siliceous Siltstone

HOSTROCK COMMENTS: Gunsteel Formation (informal name) is Middle to Upper Devonian.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Calcareous barite beds, up to 2 metres thick, occur in siltstone. Barite nodules are 1 to 5 centimetres. The showing is in the centre of the Mat claim group, on a ridge 5.5 kilometres west-northwest of the northern end of Netson Lake, 10 kilometres northeast of Gataga Mountain in the Muskwa Ranges (Assessment Report 8379, Map 1).

The area lies at the northwestern extremity of the Gataga mineral district, in a broad belt of Paleozoic basinal-facies sedimentary strata known as the Kechika Trough, part of Ancestral North America (Map 38; Exploration and Mining Geology, Volume 1; Geological Survey of Canada Map 1713A). The Gataga mineral deposits are characterized by stratiform sedimentary-exhalative barite-sulphide mineralization, particularly in the Middle to Upper Devonian Gunsteel Formation (informal name) of the Devono-Mississippian Earn Group.

As well as the Earn Group, the area is underlain by Cambrian to Lower Devonian sedimentary rock units; all have been deformed into tight, northeasterly-overturned folds and imbricated by thrust faults (Fieldwork 1994, Open File 1995-4; Geological Survey of Canada Maps 42-1962, 1712A, Paper 88-1E). The general strike is northwest, and the dominant dip is moderately to steeply southwest.

Recent Ministry mapping in the area immediately to the southeast indicates that a narrow thrust panel of Earn Group rocks, probably Gunsteel Formation, likely continues into the Mat claim group. This unit comprises carbonaceous and siliceous slate and siltstone and locally contains bedded or nodular barite horizons. It is likely that the barite outcrop referred to belongs to this unit, demonstrating the continuation of favourable stratigraphy. The property does contain gossaneous soils with anomalous zinc values, but overall, geochemical indicators of mineralization are very weak (Assessment Report 8379).

A sample of the barite assayed 36.55 per cent barite, 0.253 per cent phosphorus and 0.37 per cent strontium. Another sample, 1

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1520
REPORT: RGEN0100

CAPSULE GEOLOGY

kilometre to the south-southeast, assayed 43.37 per cent barite and 0.53 per cent strontium. This calcareous bedded barite is 1 to 20 centimetres thick and over 2 metres along strike (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT *8379
EMPR EXPL 1980-451
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
GSC P 1988-1E, p. 1
EMG 1992, pp. 1-20
EMPR OF 2000-22

DATE CODED: 1995/02/02
DATE REVISED: 1998/12/21

CODED BY: CJR
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 019**

MINFILE NUMBER: **094L 020**

NATIONAL MINERAL INVENTORY:

NAME(S): **JN95-4-1**, MUSK

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10W 094L10E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 39 27 N
LONGITUDE: 126 45 11 W
ELEVATION: 1300 Metres

NORTHING: 6504099
EASTING: 630356

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-09, 8 kilometres north of Brownie Mountain, 12 kilometres northwest of Bluff Creek in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

ALTERATION: Silica

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Stratabound Disseminated

CLASSIFICATION: Sedimentary

TYPE: E17 Sediment-hosted barite

COMMENTS: Bedded barite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Devonian-Mississipp.

GROUP

Earn

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Baritic Mudstone
Shale
Siltstone
Slate
Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample JN95-4-1 is represented as a laminated to massive grey barite, and baritic lenses in mudstone, alternating over 2 metres. The beds occur within Middle Devonian to Lower Mississippian Earn Group sediments. It is located 8 kilometres north of Brownie Mountain, 3 kilometres northwest of the Solo (094L 015). A sample of the barite assayed 0.56 per cent barium (Geoscience Map 1998-9). Several other barite layers within siltstone, mudstone and slate occur over a 2-kilometre northwest trending area.

Cominco Ltd. staked the area north of this showing in 1996 as the Musk claims. Sampling of a barite showing on the Musk 7 claim assayed over 50 per cent barium (Assessment Report 24979).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 24979
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **CRE95-9-9**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 38 25 N
LONGITUDE: 126 48 00 W
ELEVATION: 1600 Metres

NORTHING: 6502092
EASTING: 627697

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 7 kilometres northwest of Brownie Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Stratabound Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite
COMMENTS: Bedded barite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Baritic Siltstone
Slate
Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample CRE95-9-9 is represented as a 0.5-metre thick, bedded, baritic siltstone within Middle Devonian to Lower Mississippian Earn Group sediments. The barite is finely disseminated or in rosettes up to 1 centimetre. The occurrence is located 7 kilometres northwest of Brownie Mountain. A sample of the barite assayed 27.36 per cent barium (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 022**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-5-13-2**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 37 11 N
LONGITUDE: 126 53 14 W
ELEVATION: 1650 Metres

NORTHING: 6499641
EASTING: 622707

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 3 kilometres southeast of Gataga Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Lead Zinc Silver

MINERALS

SIGNIFICANT: Galena

ASSOCIATED: Quartz

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein

CLASSIFICATION: Epigenetic Hydrothermal

TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Cambrian	Unnamed/Unknown Group	Undefined Formation	

LITHOLOGY: Siliceous Slate

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-5-13-2 is represented by disseminated galena in sheared, fractured, silicified slates of the Cambrian age. It is located 3 kilometres southeast of Gataga Mountain. Mineralization is over a 5 to 10-centimetre zone. A sample assayed 4.88 per cent lead, 0.56 per cent zinc and 30.1 grams per tonne silver (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM GEOS MAP 1998-9
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 023**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-12-2**, NET 5

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 40 50 N
LONGITUDE: 126 50 26 W
ELEVATION: 1400 Metres

NORTHING: 6506498
EASTING: 625199

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 6 kilometres northeast of Gataga Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite Strontium

MINERALS

SIGNIFICANT: Barite
ASSOCIATED: Calcite
ALTERATION: Calcite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Stratabound Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite
COMMENTS: Bedded barite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Limestone
Cherty Argillite
Calcareous Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-12-2 is a 0.5-metre thick bed of calcareous barite within limestone and cherty argillite of the Middle Devonian to Lower Mississippian Earn Group. It is located 6 kilometres northeast of Gataga Mountain. A sample of the barite assayed 44.19 per cent barium and 0.388 per cent strontium (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 24978
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 024**

NATIONAL MINERAL INVENTORY:

NAME(S): **BROKEN BIT BARITE** NET 10

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 41 16 N
LONGITUDE: 126 50 46 W
ELEVATION: 1400 Metres

NORTHING: 6507292
EASTING: 624851

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 6 kilometres northeast of Gataga Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite Strontium

MINERALS

SIGNIFICANT: Barite
ASSOCIATED: Calcite
ALTERATION: Calcite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Stratabound Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite
COMMENTS: Bedded barite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Limestone
Argillite
Calcareous Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

Broken Bit Barite is massive, bedded calcareous barite within limestone and argillite of the Middle Devonian to Lower Mississippian Earn Group. It is located 6 kilometres northeast of Gataga Mountain. Samples of the barite assayed from 25.29 to 47.91 per cent barium; one sample assayed 0.16 per cent strontium (Geoscience Map 1998-9). Coarse 'sand' beneath the rubble contains 47.91 per cent barium, apparently accounting for the large kill zone in which no vegetation, not even lichen, survive (Bulletin 107, page 99).

BIBLIOGRAPHY

EM BULL 107, pp. 98-99
EM GEOS MAP 1998-9
EMPR ASS RPT 24978
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 2003/02/10

CODED BY: FF
REVISED BY: MPS

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-27-7**, NET 21, NET 24

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10W
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 42 30 N
LONGITUDE: 126 53 26 W
ELEVATION: 1175 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6509498
EASTING: 622203

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 7.5 kilometres north of
Gataga Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Lead Zinc Silver Barite

MINERALS

SIGNIFICANT: Galena Barite
ASSOCIATED: Quartz Pyrite Calcite
MINERALIZATION AGE: Silurian

DEPOSIT

CHARACTER: Vein Stratiform Disseminated
CLASSIFICATION: Epigenetic Hydrothermal Sedimentary
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Slate
Siltstone
Baritic Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-27-7 is represented by galena-bearing quartz in highly fractured slate and siltstone of the Middle Devonian to Lower Mississippian Earn Group. It is located 7.5 kilometres north of Gataga Mountain. Baritic limestone occurs nearby and 700 metres to the northeast is 1 to 5-centimetre thick beds of baritic limestone and occurrences of barite crystals and pyrite within slate and siltstone. A sample of the galena-bearing quartz vein assayed 3.14 per cent lead, 0.14 per cent zinc and 15.7 grams per tonne silver (Geoscience Map 1998-9).

Cominco notes mineralization sporadically distributed over an area 10 by 8 metres. Galena and sphalerite in quartz calcite veins and disseminations occur in fractured, silicified siltstone and slate, interbedded with grey baritic limestones. Cominco noted up to 6.9 per cent zinc, 206 ppm lead and 4.5 ppm silver (Bulletin 107, page 111).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 24978
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 2003/02/10

CODED BY: FF
REVISED BY: MPS

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 026**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE94-29-13**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 37 16 N
LONGITUDE: 126 40 56 W
ELEVATION: 1225 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6500189
EASTING: 634605

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 5 kilometres northeast of Brownie Mountain, 7 kilometres northwest of Bluff Creek in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite Copper Silver Strontium

MINERALS

SIGNIFICANT: Barite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I06 Cu±Ag quartz veins

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE94-29-13 is a copper-barite quartz vein within Middle Devonian to Lower Mississippian Earn Group sediments. It is located 5 kilometres northeast of Brownie Mountain and 2 kilometres southeast of the Solo (094L 015). A sample assayed 0.24 per cent copper, 20.2 grams per tonne silver, 0.339 per cent strontium and 18.78 per cent barium (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 7292
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 027**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE94-18-8**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 36 07 N
LONGITUDE: 126 43 30 W
ELEVATION: 1400 Metres

NORTHING: 6497970
EASTING: 632193

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 2 kilometres northeast of Brownie Mountain, 7 kilometres northwest of Bluff Creek in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

ALTERATION: Silica

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Stratabound Disseminated

CLASSIFICATION: Sedimentary

TYPE: E17 Sediment-hosted barite

COMMENTS: Bedded barite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Baritic Shale
Siliceous Shale
Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE94-18-8 is a bedded barite occurrence within Middle Devonian to Lower Mississippian Earn Group sediments. It is located on the northeast slope of Brownie Mountain, 3 kilometres south of the Solo (094L 015). A sample of the barite assayed 15.17 per cent barium (Geoscience Map 1998-9).

One kilometre north-northeast of this location is finely disseminated barite within siliceous shale.

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 7292
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-18-13**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L11E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 40 51 N
LONGITUDE: 127 00 52 W
ELEVATION: 1075 Metres

NORTHING: 6506218
EASTING: 615118

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 7.5 kilometres northwest of Gataga Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Sedimentary

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE

Proterozoic-Cambrian

GROUP

Unnamed/Unknown Group

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Siltstone
Slate

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-18-13 is represented by malachite staining on green and maroon slates and siltstones of Lower Cambrian or Upper Proterozoic metasediments. It is located 7.5 kilometres northwest of Gataga Mountain. A sample assayed 0.2 per cent copper (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 029**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-23-7**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 44 02 N
LONGITUDE: 126 52 08 W
ELEVATION: 1220 Metres

NORTHING: 6512382
EASTING: 623368

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 10 kilometres north of Gataga Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

ASSOCIATED: Pyrite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated

CLASSIFICATION: Sedimentary

TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Slate
Siltstone
Baritic Mudstone
Chert

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-23-7 is represented by several horizons, 3 to 10 centimetres thick, with barite rosettes and crystals, and disseminated pyrite in siltstone and slate of the Middle Devonian to Lower Mississippian Earn Group. It is located 10 kilometres north of Gataga Mountain. One kilometre to the northwest are small chips of baritic mudstone in black, bedded radiolarian chert. A sample of the barite assayed 1.05 per cent barium (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154
EMPR OF 1995-4; 1996-3
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1531
REPORT: RGEN0100

MINFILE NUMBER: **094L 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **JN95-7-4**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L14E 094L11E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 45 21 N
LONGITUDE: 127 05 46 W
ELEVATION: 1600 Metres

NORTHING: 6514429
EASTING: 610147

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, on the west side of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Malachite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Sedimentary

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Cambrian

GROUP

Unnamed/Unknown Group

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample JN95-7-4 is represented by sparse chalcopyrite and malachite within breccia near the contact between two Cambrian rock units. It is located on the west side of Terminus Mountain. (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM GEOS MAP 1998-9
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1995-4; 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 030**

MINFILE NUMBER: **094L 031**

NATIONAL MINERAL INVENTORY:

NAME(S): **CRE95-24-7**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L15W 094L10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 45 00 N
LONGITUDE: 126 52 27 W
ELEVATION: 1425 Metres

NORTHING: 6514166
EASTING: 623005

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 12 kilometres north of Gataga Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Siltstone
Chert
Calcareous Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample CRE95-24-7 is represented by a 2-metre thick, thinly bedded, black calcareous barite with small chert nodules within siltstone and chert the Middle Devonian to Lower Mississippian Earn Group. It is located 12 kilometres north of Gataga Mountain. (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK 1994, pp. 277-295; 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1995-4; 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 032**

NATIONAL MINERAL INVENTORY:

NAME(S): **JN95-8-1**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L15W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 46 42 N
LONGITUDE: 126 54 09 W
ELEVATION: 1300 Metres

NORTHING: 6517268
EASTING: 621267

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 11 kilometres east northeast of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Siliceous Mudstone
Chert
Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample JN95-8-1 is a coarse-grained barite bed, 2 to 3 centimetres thick, in black siliceous mudstone and chert of the Middle Devonian to Lower Mississippian Earn Group. It is located 11 kilometres east northeast of Terminus Mountain. (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 033**

NATIONAL MINERAL INVENTORY:

NAME(S): **JN95-14-1**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L15W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 46 04 N
LONGITUDE: 126 56 15 W
ELEVATION: 1300 Metres

NORTHING: 6516030
EASTING: 619280

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 9 kilometres east of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Chert
Slate
Calcareous Barite
Baritic Limestone
Cherty Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample JN95-14-1 is a calcareous barite with small chert nodules, interbedded with chert and slate of the Middle Devonian to Lower Mississippian Earn Group. It is located 9 kilometres east of Terminus Mountain. About 2.2 kilometres along strike to the northwest is a weakly baritic limestone, with small black chert nodules, within cherty siltstone. (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 034**

NATIONAL MINERAL INVENTORY:

NAME(S): **JN95-10-10**, MAT

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L14E 094L15W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 47 22 N
LONGITUDE: 127 00 46 W
ELEVATION: 1625 Metres

NORTHING: 6518311
EASTING: 614856

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-09, 6 kilometres northeast of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite Copper Zinc

MINERALS

SIGNIFICANT: Barite Chalcopyrite Sphalerite

ASSOCIATED: Pyrite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Chert
Siltstone
Calcareous Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample JN95-10-10 is a calcareous barite bed, 1.5 metres thick, with small black chert nodules, within chert and siltstone of the Middle Devonian to Lower Mississippian Earn Group. It is located 6 kilometres northeast of Terminus Mountain. (Geoscience Map 1998-9).

In 1996, Cominco Ltd. staked the nearby Phrase claims (094L 035). A sample assayed 6.67 per cent barium and 0.336 per cent zinc (Assessment Report 24977). Hunter Exploration Group surveyed the area as the Mat claims in 1997

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 24977; 25183
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 035**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-29-11**, PHRASE 3, TERM

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L14E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 46 52 N
LONGITUDE: 127 03 37 W
ELEVATION: 1500 Metres

NORTHING: 6517303
EASTING: 612138

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 3 kilometres north northeast of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite Zinc

MINERALS

SIGNIFICANT: Barite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Baritic Limestone
Argillite
Slate
Baritic Chert

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-29-11 is a dark grey, fetid, baritic limestone with chert nodules. The unit is 0.5 metre thick and occurs within argillite and slate of the Middle Devonian to Lower Mississippian Earn Group. It is located 3 kilometres north northeast of Terminus Mountain. (Geoscience Map 1998-9).

There are three main units in the showings: a lower 70-metre thick section of massive, siliceous, black, carbonaceous shale with white chert nodules; a middle 100-metre thick recessive black fissile shale with baritic limestone lenses; and an upper 15-metre section of massive siliceous black shale, also with baritic limestone lenses (Bulletin 107, page 106).

Cominco Ltd. staked the area as the Term claims and later in 1996 as the Phrase claims. Several barite showings, mainly to the west of this showing, were located and assays returned up to 50 per cent barium and 0.28 per cent zinc (Assessment Report 24977).

BIBLIOGRAPHY

EM BULL 107, pp. 105-106
EM GEOS MAP 1998-9
EMPR ASS RPT *24977
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 2003/02/10

CODED BY: FF
REVISED BY: MPS

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 036**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-47-8**, PHRASE 1, TERM

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L14E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 48 02 N
LONGITUDE: 127 06 37 W
ELEVATION: 1150 Metres

NORTHING: 6519384
EASTING: 609187

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 5 kilometres north of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Baritic Limestone
Argillite
Slate
Baritic Chert

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-47-8 is a dark grey, baritic limestone with chert nodules. The unit is up to 1.5 metres thick and occurs within argillite and slate of the Middle Devonian to Lower Mississippian Earn Group. It is located 5 kilometres north of Terminus Mountain. (Geoscience Map 1998-9).

Cominco staked the area in 1996 as the Phrase claims. See also FFE95-47-8 (094L 035).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 24977
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 037**

NATIONAL MINERAL INVENTORY:

NAME(S): **CRE95-38-1-2**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L14E 094L15W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 49 24 N
LONGITUDE: 127 00 52 W
ELEVATION: 1375 Metres

NORTHING: 6522080
EASTING: 614648

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 9 kilometres northeast of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite Strontium

MINERALS

SIGNIFICANT: Barite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated Stratabound
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Slate
Calcareous Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample CRE95-38-1-2 is a black, fetid, calcareous barite, over 1 metre thick, within slates of the Middle Devonian to Lower Mississippian Earn Group. It is located 9 kilometres northeast of Terminus Mountain. A sample of the barite assayed 48.36 per cent barium and 0.33 per cent strontium (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 038**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHIEF**, FFE95-46-11, CHIEF 4,
BRAVE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L15W 094L14E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 50 43 N
LONGITUDE: 126 59 54 W
ELEVATION: 1200 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6524551
EASTING: 615505

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 12 kilometres northeast of
Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite Zinc

MINERALS

SIGNIFICANT: Barite Sphalerite
ASSOCIATED: Pyrite Quartz Calcite
ALTERATION: Limonite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratabound Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Argillite
Calcareous Barite
Siliceous Shale
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Showing FFE95-46-11, discovered in 1995, is a massive to flaggy, 2-metre thick bed of crystalline calcareous barite, within argillites of the Middle Devonian to Lower Mississippian Earn Group. (Geoscience Map 1998-9). It is located 12 kilometres northeast of Terminus Mountain.

Cominco Ltd. subsequently staked the showing as the Chief claims in 1996. A 2.3-metre chip sample assayed 36.9 per cent barite. Nearby a 3-metre wide breccia zone, cross-cutting the argillite, comprises a matrix of calcite, barite, limonite, quartz and minor sphalerite. A grab sample of the breccia assayed 0.58 per cent zinc, 0.06 per cent copper and 1.43 per cent barium (Assessment Report 25012). About 200 metres to the northwest is the Brave showing, where a 30-metre long by five metre wide talus/kill zone exposes blocks of massive barite.

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT *25012
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 039**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-46-1**, CHIEF 14

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L15W 094L14E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 51 28 N
LONGITUDE: 126 59 27 W
ELEVATION: 1200 Metres

NORTHING: 6525955
EASTING: 615896

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 13 kilometres northeast of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite Strontium

MINERALS

SIGNIFICANT: Barite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratabound Stratiform Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Argillite
 Calcareous Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-46-1 is a fetid, bedded calcareous barite, 1.5-metre thick, within dark grey argillites of the Middle Devonian to Lower Mississippian Earn Group. It is located 13 kilometres northeast of Terminus Mountain. A sample assayed 48.34 per cent barium and 0.36 per cent strontium (Geoscience Map 1998-9). Cominco Ltd. staked the area as the Chief claims in 1996.

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 25012
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 040**

NATIONAL MINERAL INVENTORY:

NAME(S): **JN95-13-8**, CHIEF 8, CHIEF 9

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L14E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 58 51 46 N
LONGITUDE: 127 02 08 W
ELEVATION: 1220 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6526435
EASTING: 613300

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 13 kilometres north northeast of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

ASSOCIATED: Pyrite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated Stratabound
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Baritic Siltstone
Carbonaceous Pyritic Mudstone
Slate

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Muskwa Ranges

TERRANE: Ancestral North America

COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample JN95-13-8 is a thin, massive to laminated baritic siltstone, within pyritic carbonaceous mudstone and slate of the Middle Devonian to Lower Mississippian Earn Group. It is located 13 kilometres north northeast of Terminus Mountain. (Geoscience Map 1998-9).

The area was subsequently staked as the Chief claims by Cominco Ltd. in 1996.

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR ASS RPT 25012
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094L 042**

NATIONAL MINERAL INVENTORY:

NAME(S): **FFE95-41-3**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094L14E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 58 50 55 N
LONGITUDE: 127 08 07 W
ELEVATION: 1175 Metres

NORTHING: 6524694
EASTING: 607594

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-9, 11 kilometres north of Terminus Mountain, in the Muskwa Ranges (Geoscience Map 1998-9).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Disseminated Stratabound
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Ordovician-Silurian

GROUP

Road River

FORMATION

Undefined Formation

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Baritic Argillite
Baritic Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America
COMMENTS: Northwestern extremity of Gataga mineral district, in Kechika Trough.

CAPSULE GEOLOGY

Sample FFE95-41-3 is an argillite layer, 0.5 metre thick, with up to 30 per cent barite rosettes. There are also baritic limestone lenses. The units belong to the Ordovician to Lower Silurian Road River Group. The sample located 11 kilometres north of Terminus Mountain. (Geoscience Map 1998-9).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-9
EMPR FIELDWORK 1995, pp. 137-154; 1996, pp. 125-144
EMPR OF 1996-3; 1997-14
GSC MAP 42-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 1999/01/04

CODED BY: FF
REVISED BY: LDJ

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094M 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **GERT, LIARD, FIRESIDE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M11E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 40 43 N
LONGITUDE: 127 06 56 W
ELEVATION: 560 Metres

NORTHING: 6617126
EASTING: 606118

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Showing Two in Gert and Liard claims of Fireside property, 2 kilometres east of Fireside on Alaska Highway (Property File - Cholach, M.S. (1970): Report on Fireside Copper property, Figure 2).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.
DIMENSION: 60 x 30 Metres STRIKE/DIP: 315/80W
COMMENTS: Known length and maximum width of mineralized shear zone containing Showings One and Two. Approximate orientation of shear zone.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Cambrian Unnamed/Unknown Group Unnamed/Unknown Formation

LITHOLOGY: Argillite
Slate
Limy Slate
Quartz Carbonate Vein

HOSTROCK COMMENTS: Age uncertain. Probably Cambrian but may be older.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: In poorly exposed Liard Plain.

PHYSIOGRAPHIC AREA: Hyland Highland

INVENTORY

ORE ZONE: SHOWING REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Drill Core
COMMODITY GRADE
Copper 0.1900 Per cent
COMMENTS: Showing Two, diamond drill hole F1, over 4.6 metres. Includes 1.5 metres of 0.5 per cent copper.
REFERENCE: Property File - Cholach, M.S. (1970): Report on the Fireside property.

ORE ZONE: TRENCH REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Channel
COMMODITY GRADE
Copper 0.3500 Per cent
COMMENTS: Trench 3A, average of six 1.5-metre channel samples.
REFERENCE: Property File - Cholach, M.S. (1970): Report on the Fireside property.

CAPSULE GEOLOGY

The Gert copper showing is situated in the Liard and Gert claims of the Fireside property, 2 kilometres east of the settlement of Fireside on the Alaska Highway (Property File - Cholach, M.S. (1970): Report on the Fireside Copper property, Figure 2). Note that this is apparently not the same "Fireside Property" as that which was concerned with a barite mining operation 11 kilometres to the north-northwest (see Fireside - 094M 003).

The area is underlain by predominantly Lower Paleozoic

CAPSULE GEOLOGY

sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 1712A, 1713A). Relief here in the Liard Plain is generally quite low and exposure is limited, so detailed geological control is lacking. The Fireside property is apparently underlain by Cambrian (or possibly older) argillite, slate and limy slate (Property File - Cholach, M.S. (1970); Geological Survey of Canada Map 46-1962).

Mineralization has been studied in three showings (Property File - Cholach, M.S. (1970)). Showings One and Two, on which the occurrence is centred, lie 600 metres apart on a northwest-striking, steeply-dipping shear zone in argillite. The shear zone is between 30 and 60 metres wide, and is marked by three sets of fractures, each filled with quartz and carbonate veins. At Showing One, disseminated chalcopyrite, locally abundant, is present in two of the sets. The "estimated average assay over the entire zone is about 0.1 per cent copper, and smaller richer sections may assay as high as 0.5 per cent copper" (Property File - Cholach, M.S. (1970)).

Showing Two has similar characteristics, but is not as well exposed. Trenches did not reach bedrock, so two holes were diamond drilled. In hole F1, the best chalcopyrite was intersected at between 3.65 and 8.3 metres below the collar, assaying 0.19 per cent copper over the 4.6 metres, including a 1.5-metre section grading 0.5 per cent copper (Property File - Cholach, M.S. (1970)). The other hole had to be abandoned.

Showing Three occurs on another northwest-striking shear zone, 3 kilometres to the east of the other showings, on the shore of a narrow, east-trending lake. The sheared slate here is veined with quartz over a width of 9 metres. This zone contains abundant chalcopyrite, with some malachite. Six 1.5-metre long channel samples were taken across the zone, in trench 3A. Assays ranged from 0.1 to 0.78 per cent copper, with an average of 0.35 per cent (Property File - Cholach, M.S. (1970)). Another trench cut approximately 30 metres to the northwest exposed the shear zone but it was not mineralized.

BIBLIOGRAPHY

EMPR PF (*Cholach, M.S. (1970): Report on the Fireside Property)
GSC MAP 46-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/24

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 002**

NATIONAL MINERAL INVENTORY: 94M/8,9 FI 1

NAME(S): **GEM**, GEM E, LIARD FLUORSPAR

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094M08E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 27 10 N
LONGITUDE: 126 05 37 W
ELEVATION: 860 Metres

NORTHING: 6594071
EASTING: 664747

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Showing A or Gem A, roughly in centre of Gem claim group, 3.5 kilometres north of settlement of Liard River on Alaska Highway (Assessment Report 109, Map 8; Fieldwork 1988, page 478).

COMMODITIES: Fluorite Barite Strontium

MINERALS

SIGNIFICANT: Fluorite Witherite Barite
COMMENTS: Fluorite and witherite are typically subequal. Barite is usually subordinate.

ASSOCIATED: Quartz Calcite

MINERALIZATION AGE: Mississippian
ISOTOPIC AGE: 332 +/- 56 Ma

DATING METHOD: Fission Track

MATERIAL DATED: Fluorite

DEPOSIT

CHARACTER: Stratabound Podiform Massive
CLASSIFICATION: Replacement Hydrothermal Epigenetic Breccia
TYPE: E11 Carbonate-hosted fluorspar E10 Carbonate-hosted barite
SHAPE: Irregular

DIMENSION: 1800 x 1500 x 3 Metres STRIKE/DIP: TREND/PLUNGE:

COMMENTS: Maximum length and approximate width of whole mineralized area, and typical thickness of mineralization. Attitude of mineralized zone is variable and subhorizontal, in open, gently south-plunging anticline.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Upper Devonian	Undefined Group	Besa River	

LITHOLOGY: Brecciated Limestone
Brecciated Argillite
Fossiliferous Limestone
Black Argillite
Black Slate

HOSTROCK COMMENTS: Dunedin Formation exposed in core of open anticline, below Besa River Formation. Mineralization straddles unconformity.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America
COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Drill Core
COMMODITY: Fluorite GRADE: 39.0000 Per cent

COMMENTS: Best intersection, over 15 metres, hole 72-12 in Gem E showing.
REFERENCE: Assessment Report 3975, page 10.

CAPSULE GEOLOGY

The Gem fluorite prospect is situated in the Gem claim group, 3.5 kilometres north of the settlement of Liard River on the Alaska Highway (Assessment Reports 109, Map 8; 3975, Maps 3, 17), in one of the most important areas of fluorite mineralization in British Columbia. The occurrence is centred on Showing A, roughly in the centre of a triangular area of several mineral showings measuring 1.8 by 1.5 by 1.5 kilometres. It was explored by Conwest Exploration Limited in 1954 and 1971-72.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of

CAPSULE GEOLOGY

Canada Maps 46-1962, 1712A, 1713A). The Gem prospect is one of many similar and significant fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. This belt is defined by an open anticline, with a gently south-plunging axis, in the Upper Devonian Besa River Formation, with the Middle Devonian Dunedin Formation exposed in a 2 to 4 kilometres-wide zone in the core of the fold. All the fluorite deposits in the belt are situated at or just above or below the unconformity between these units.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting (Assessment Report 3975). Such faulting and shearing is shown by brecciated argillite.

The occurrence encompasses about seven showings in the Gem claim group, covering an area southeast of Mould Creek, at the southern end of the fluorite belt referred to above (Assessment Reports 109, 3975, Geology, Exploration and Mining in British Columbia 1972, Open File 1992-16). The deposits generally occur as lenticular replacements in Dunedin Formation limestone, or Besa River Formation argillite near their contact, or in both units. These replacement bodies are usually irregular but may be stratiform and massive, particularly in the limestone. Much of the mineralization is in the form of fracture-filling in brecciated limestone (or less commonly argillite), possibly a solution collapse feature of the replacement process, or due to the replacing solutions invading fault breccia. The host rock breccia fragments are mostly angular and a few centimetres across.

The strongest mineralization generally consists of 60 per cent combined fluorite and witherite, typically in subequal amounts, with a smaller proportion of barite (Assessment Report 109). Minor quartz and calcite may be associated. The fluorite varies from dark purple and coarse grained, to black and fine grained. Prolonged exposure to sunlight tends to render the fluorite colourless (Assessment Report 109). The witherite is massive, very fine grained, and varies from white to black. Mineralization in the argillite and slate is much more friable, and is locally much richer in witherite and barite than fluorite.

The showings have been designated A to G and have been studied in detail (Assessment Reports 109, 3975); geochemical analyses are given in Geology, Exploration and Mining in British Columbia 1972, page 591, and Open File 1992-16, page 35. Showing A, or Gem A, is a replacement of limestone and is 6 metres thick, but may reach 9 metres. Showing B is similar, and is 2.4 metres thick. Showing C is 12 metres long and 2.75 metres thick. The "ore" has a horizontal cleavage and may be a replacement of argillite. Showing D consists of argillite with numerous stringers and lenses of witherite.

Showing E is a replacement of argillite and slate immediately above the limestone, and comprises lenses and stringers of fluorite and witherite (up to 74 per cent very friable witherite, locally), and an unusually large amount of barite. A sample collected at the main trench contained 18.27 per cent CaO, 13.83 per cent F, 19.34 per cent Ba, 9.6 per cent CO₂, 2.37 per cent SO₃, 14.04 per cent SiO₂, and over 3 per cent strontium (Geology, Exploration and Mining in British Columbia 1972). Diamond drilling has shown the mineralization at Gem E to be quite extensive, but much of it is less than 3 metres thick. However, three holes intersected greater widths, the best mineralization grading 39 per cent fluorite over 15 metres, in hole 72-12 (Assessment Report 3975).

Showings F and G are replacement bodies in limestone. Showing F consists of coarse purple fluorite and witherite but is not well exposed.

Given the consistent setting of the mineralization, it is possible that the showings represent remnants of a much larger, semi-continuous stratabound deposit, although apparently not one of significant thickness (Assessment Report 3975).

Fission-track studies of fluorite from the Gem showings suggest that the age of formation of the deposit is 332 +/- 56 million years (mid-Mississippian) (Fieldwork 1988, page 479).

BIBLIOGRAPHY

- EMPR AR 1954-178
- EMPR GEM 1972-587
- EMPR FIELDWORK 1988, pp. 478-479

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1548
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR ASS RPT *109, 1233, 3840, *3975
EMPR OF *1992-16, pp. 33-40
GSC BULL 186
GSC P 72-32, p. 20
GSC MAP 46-1962; 1712A; 1713A
CJES, Vol. 15, pp. 1391-1406
N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/06

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 003**

NATIONAL MINERAL INVENTORY: 94M14 Ba1

NAME(S): **FIRESIDE**, BEAR, MOOSE,
BEAVER, WOLF, DEER,
WEST BEAR, EAST BEAR

STATUS: Producer
REGIONS: British Columbia
NTS MAP: 094M14E 094M14W
BC MAP:
LATITUDE: 59 46 18 N
LONGITUDE: 127 12 29 W
ELEVATION: 731 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Bear zone in Fireside property, 6 kilometres southeast of eastern end of Hillgren Lakes, 11 kilometres north-northwest of settlement of Fireside on Alaska Highway (Assessment Report 9052).

Open Pit

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6627342
EASTING: 600630

COMMODITIES: Barite Lead Zinc

MINERALS

SIGNIFICANT: Barite Galena Sphalerite
COMMENTS: Minor galena and sphalerite at Bear zone.
ASSOCIATED: Dolomite Quartz
COMMENTS: Secondary sideritic dolomite in Moose zone.
ALTERATION: Limonite Dolomite
COMMENTS: Iron staining on barite.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.
TYPE: I10 Vein barite
SHAPE: Tabular
DIMENSION: 130 x 20 Metres
COMMENTS: Length and width of Bear zone. Veins strike northeast and dip vertically.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Argillite
Shale
Siltstone
Grit
Breccia

HOSTROCK COMMENTS: Host rocks are Cambrian (or possibly older) to Devonian in age.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Hyland Highland

INVENTORY

ORE ZONE: BEAVER REPORT ON: Y
CATEGORY: Measured YEAR: 1988
QUANTITY: 18000 Tonnes
COMMODITY: Barite GRADE: 58.1400 Per cent
COMMENTS: Actually barium. Grade of grab sample, which is probably representative.
REFERENCE: Property File - Property description, circa 1988.

ORE ZONE: BEAR REPORT ON: Y
CATEGORY: Measured YEAR: 1988
QUANTITY: 21000 Tonnes
COMMODITY: Barite GRADE: 57.0400 Per cent
COMMENTS: Actually barium. Grade of grab sample, which is probably representative.
REFERENCE: Property File - Property description, circa 1988.

CAPSULE GEOLOGY

This barite deposit, part of which was mined in the early 1980s, is situated in the Fireside property, 6 kilometres southeast of the eastern end of Hillgren Lakes, 11 kilometres north-northwest of the settlement of Fireside on the Alaska Highway (Assessment Report 9052).

The Fireside deposit is in a poorly exposed area in the Liard Plain. The few outcrops in the region are of Cambrian (or older) to Devonian age, and consist of fine to medium-grained siliciclastics and calcareous rocks belonging to Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A).

The rocks hosting the barite showings on the property are mainly thinly bedded brown to grey argillite, shale, siltstone and grit, some of which are brecciated with a siliceous matrix (Minister of Mines Annual Report 1965; Property File - Property description, circa 1988). In general, bedding strikes north to northwest and dips gently to moderately eastwards.

Barite is present in a number of zones, known as the Bear, Moose, Beaver and Wolf zones. Formerly the largest, before it was mined, is the Moose zone where a system of barite veins occur within a north-striking, steeply dipping, anastomosing fault zone (Assessment Report 9052). Barite pinches and swells along the structure and rarely exceeds 3.5 metres in width. The barite is white to creamy white, coarsely crystalline, commonly iron stained, and locally banded. It is associated with secondary sideritic dolomite. A grab sample returned an analysis of 58.26 per cent barium, with negligible base metal values; its specific gravity was 4.2 (Property File - Property description, circa 1988). The barite contains only 0.11 per cent strontium.

The Moose zone has been mined by open pit over a length of 400 metres (Property File - Property description, circa 1988; Assessment Report 9052). Records show that in 1984 and 1985, a total of 41,071 tonnes of barite ore was mined and milled by Dresser Industries Incorporated, presumably all from the Moose quarry (Mining in British Columbia 1981-1985). Reserves are virtually exhausted from this quarry, but substantial reserves of barite still exist at the Bear zone (Property File - Property description, circa 1988).

The Bear zone, on which the occurrence is centred, is situated 2.5 kilometres northeast of the Moose zone. Two main barite veins are exposed over a length of 130 metres and width of 20 metres, striking northeast with subvertical dips. The south vein is 3 metres wide and the north vein is 1 metre wide. The barite veins are very similar in appearance and composition to that at the Moose zone. They are streaked grey and white and cut by fractures parallel to the length of the veins. Galena and minor sphalerite are present in irregular patches along some fractures (Minister of Mines Annual Report 1965). Other fractures are open and have vuggy pockets of barite crystals. A sample from the Bear zone was analysed at 57.04 per cent barium (Property File - Property description, circa 1988). There are a number of other smaller veins and lenses of barite in the area, and thin stringers of barite and quartz in the argillite and brecciated argillite host rocks.

The Beaver zone is about 700 metres northwest of the Moose zone. It is exposed over a length of 45 metres and across a width of 4 metres, and strikes north-northeast and dips vertically. Like the other zones, the barite is coarsely crystalline, cream or white to very pale grey in colour, with some limonite staining. A sample was analysed at 58.14 barium (Property File - Property description, circa 1988).

Measured geological reserves in the Bear zone are approximately 21,000 tonnes of barite with a specific gravity of 4.25, and in the Beaver zone there are 18,000 tonnes of barite with a specific gravity of 4.25 (Property File - Property description, circa 1988).

A crew of 9 persons are employed at Fireside Minerals' barite processing plant in Watson Lake, processing about 181 tonnes per day. The plant was bought from Dresser Industries (previous operator). The very high quality barite is being shipped north to the Alaska oilfields and south to the Grand Prairie area, for use as drilling mud (T. Schroeter, personal communication, 1997). Approximately 18,000 tonnes of barite was mined from the Bear vein pit in the 1998 season. From the new West Bear pit, 11,500 tonnes was mined. A mineable reserve is being established for the fault-extension East Bear.

In 1997, Fireside Minerals Ltd. estimated a reserve of 5,200,000 tonnes of barite (Information Circular 1999-1, page 11).

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- EM EXPL 1999-1-11; 2001-1-9
- EMPR AR *1965-257, 258; 1966-252
- EMPR ASS RPT 767, 2880, *9052

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1551
REPORT: RGEN0100

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relevant pages in Property File)
EMPR INF CIRC 1996-1, p. 9; 1999-1, p. 11
EMPR MAP 65 (1989)
EMPR MINING 1981-1985; 1986-1987, p. 79
EMPR OF 1992-1; 1992-9
EMPR PF (*Property description, circa 1988)
GSC MAP 2-1961; 46-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1998/08/31

CODED BY: GSB
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 004**

NATIONAL MINERAL INVENTORY:

NAME(S): **COAL RIVER**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M10W
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 42 02 N
LONGITUDE: 126 57 41 W
ELEVATION: 488 Metres

NORTHING: 6619826
EASTING: 614723

LOCATION ACCURACY: Within 500M

COMMENTS: Located on outcrops of coal and clay at sharp bend of lower Coal River, 5 kilometres north of settlement of Coal River on Alaska Highway (Geological Survey of Canada Map 46-1962, unit 12).

COMMODITIES: Coal Clay

MINERALS

SIGNIFICANT: Coal Clay Illite Kaolinite

ASSOCIATED: Quartz

COMMENTS: Very fine quartz is present in the clay.

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel Industrial Min.

TYPE: A02 Lignite

SHAPE: Tabular

DIMENSION: 275 x 5 Metres STRIKE/DIP: 045/06W

TREND/PLUNGE:

COMMENTS: Length, thickness and attitude of one coal outcrop. Clay outcrops are similar.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Tertiary	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Coal
Lignite
Clay
Shale
Siltstone
Sandstone
Conglomerate

HOSTROCK COMMENTS: Rocks are Paleogene, and are possibly part of the Sifton Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Hyland Highland

COMMENTS: Small non-marine, fault-bounded basin, overlying Paleozoic rocks.

CAPSULE GEOLOGY

The settlement of Coal River, on the Alaska Highway, derives its name from the large slabs of brown lignite that wash up onto the bars of the Coal River at its mouth, where it joins the Liard River (Geological Survey of Canada Paper 44-28). The coal was used for heating by the army during construction of the highway. The source of the coal is a small Tertiary basin 5 kilometres to the north, which also contains clay deposits. The Coal River occurrence is centred on outcrops of coal and clay on the north side of a sharp bend in the Coal River, 5 kilometres north of the settlement (Geological Survey of Canada Map 46-1962). At least some of the coal was derived from outcrops farther upstream, however.

The Tertiary basin is not well exposed, but has been estimated to be about 15 kilometres in length and 6 kilometres in width, apparently centred in the broad loop in the lower Coal River (Geological Survey of Canada Paper 44-28). It unconformably overlies Paleozoic rocks belonging to Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Tertiary rocks are Paleogene and at least 60 metres thick, and mostly comprise shale, siltstone, sandstone and conglomerate, as well as lesser lignitic coal and clay. They were deposited in a non-marine, probably fault-controlled basin. Such deposits in the Northern Rocky Mountain Trench region have been assigned to the Sifton Formation. The following descriptions are from outcrops in the area, generally along the river, though their precise locations are not certain.

CAPSULE GEOLOGY

One locality is on the north side of the broad loop in the river, about 9.5 kilometres north of the settlement. Lignite outcrops across the river bed (about 200 metres wide here) forming a rapid, and outcrops along the river bank for about 275 metres (Geological Survey of Canada Paper 44-28). On the west bank, the lignite is 4.5 metres thick and dips 6 degrees northwest. The brown-weathering lignite varies from friable to tough and "woody", containing well-preserved sections of logs. A few hundred metres upstream the same seam was reported to be on fire, emitting steam and fetid gases and leaving a residue of tar. Overlying sand and gravels are caving, and vegetation on the surface is burnt or dying.

Clay outcrops farther downstream, probably at the outcrop on which the showing is centred, about 5 kilometres north of the settlement (Geological Survey of Canada Paper 44-28). Grey to white clay forms outcrops 4.5 metres high on the west bank of the river and can be traced intermittently for a few hundred metres. The total outcrop area of the clay is probably much greater. Its maximum thickness is approximately 12 metres. The stratigraphic relationship between the clay and the lignite coal is not clear, but they are certainly part of the same Tertiary basin.

The clay is composed of illite and kaolinite (Energy, Mines and Resources Technical Bulletin 54). There is also an abundance of very fine quartz in the clay. Another laboratory study reported that the clay is smooth and non-calcareous, plastic, with an average shrinkage on drying of 6 per cent (Geological Survey of Canada Paper 44-28). The refractory properties of the clay preclude its use as a fireclay, but it was considered to be suitable for stoneware or other ceramic products.

BIBLIOGRAPHY

EMR MINES BR TB 54
GSC MAP 46-1962; 1712A; 1713A
GSC P 44-28, p. 9, 25-26, 28-31

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/10

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 005**

NATIONAL MINERAL INVENTORY: 94M/9 Fsp 1

NAME(S): **TAM FLUORITE** TAM, LIARD FLUORSPAR
THOR

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094M09E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 59 31 59 N
LONGITUDE: 126 05 06 W
ELEVATION: 1150 Metres

UTM ZONE: 09 (NAD 83)
NORTHING: 6603026
EASTING: 664843

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralization in Tam 2 and 4 claims, north end of Mould Creek, 13 kilometres north of the settlement of Liard River on Alaska Highway (Assessment Report 3975, Maps 4, 8).

COMMODITIES: Fluorite Barite

MINERALS

SIGNIFICANT: Fluorite Witherite Barite
COMMENTS: Fluorite is purple to black.
ASSOCIATED: Barytocalcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform Breccia Vein
CLASSIFICATION: Replacement Hydrothermal Epigenetic Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar E10 Carbonate-hosted barite
SHAPE: Irregular
DIMENSION: 275 x 165 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Length and maximum width of mineralized zone (thickness variable), which dips eastwards.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Upper Devonian	Undefined Group	Besa River	

LITHOLOGY: Brecciated Limestone
Brecciated Shale
Fossiliferous Limestone
Black Argillite
Black Slate
Siliceous Rock

HOSTROCK COMMENTS: Dunedin Formation exposed in core of open anticline, below Besa River Formation. Mineralization straddles unconformity.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America
COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: TAM REPORT ON: Y
CATEGORY: Indicated YEAR: 1972
QUANTITY: 450000 Tonnes
COMMODITY: Fluorite GRADE: 36.7000 Per cent
COMMENTS: Quoted as 'Indicated potential' in National Mineral Inventory.
REFERENCE: Energy, Mines and Resources, Corporation Files - year uncertain.

CAPSULE GEOLOGY

The Tam fluorite prospect is situated in the Tam 2 and 4 claims at the north end of Mould Creek, 13 kilometres north of the settlement of Liard River on the Alaska Highway (Assessment Report 3975, Maps 4, 8), in one of the most important areas of fluorite mineralization in British Columbia.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Tam prospect is one of many similar fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. This belt is defined by an open anticline, with a gently south-plunging axis, in the Upper

CAPSULE GEOLOGY

Devonian Besa River Formation, with the Middle Devonian Dunedin Formation exposed in a several-kilometre wide zone in the core of the fold. All the fluorite deposits in the belt are situated at or just above or below the unconformity between these units.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is characterized by brecciation and is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975). The mineral deposits in the Liard fluorite belt generally occur as lenticular replacement bodies or infillings in breccias in one or both of the units.

Mineralization at the Tam is at the contact between the Dunedin limestone and Besa River shale, which generally dips east or southeast (Assessment Report 3975; Geology, Exploration and Mining in British Columbia 1972, page 595). The rocks in both units are commonly brecciated and these breccias host the strongest mineralization, especially in the limestone, although it does extend into overlying shale and underlying limestone in the form of fracture-filling veins. The main mineralization occurs as a partial to complete replacement of the host rocks and as the matrix in the breccias. Purple to black fluorite is the dominant mineral, accompanied by witherite, and lesser barytocalcite and barite. Siliceous bands in the limestone may be relicts of original cherty layers. A chip sample of pure purple fluorite was analysed at 84.16 per cent CaF₂ (Open File 1992-16, page 35). A sample of replacement and vein witherite, with only a trace of fluorite, was analysed at 61.6 per cent BaO (Open File 1992-16). Some diamond drilling results are given in Geology, Exploration and Mining in British Columbia (1972).

The mineralized zone extends for at least 275 metres northwards, and is between 50 and 165 metres in width. It has a variable thickness, and dips east like the host strata. For most of the zone, the presence of breccia was apparently the dominant control for the mineralizing solutions. For example, the zone pinches out eastwards as the shale breccia dies out, and in the west it stops abruptly where the contact has been eroded.

To the north, diamond drilling has revealed structural complexities: fluorite-rich limestone breccia occurs above shale breccia, suggesting that the zone has been repeated by thrusting or inverted by folding. If deformation is indeed stronger here, and structural brecciation is an important condition for mineralization, this area may have even more potential (Assessment Report 3975). Drilling and surface work has "indicated a potential of over 450,000 tonnes averaging 36.7 per cent CaF₂" (Energy, Mines and Resources, Corporation Files).

Fission-track studies of fluorite from the Gem prospect 9 kilometres to the south suggest that the age of the mineralization in the region is Mississippian (Open File 1992-16).

BIBLIOGRAPHY

- EMPR ASS RPT 3840, *3975
- EMPR FIELDWORK 1988, pp. 478-479
- EMPR GEM 1971-462; 1972-587
- EMPR IND MIN FILE (Fluorite Occurrences in BC, (GEM) (in Ministry Library))
- EMPR OF *1992-16, pp. 33-40
- EMR MP CORPFILE (Conwest Exploration Company Limited; Jorex Limited)
- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/06

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 006**

NATIONAL MINERAL INVENTORY: 94M/9 Fsp 2

NAME(S): **FIRE TEASER, LIARD FLUORSPAR
THOR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M09E
BC MAP:

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)

LATITUDE: 59 30 52 N
LONGITUDE: 126 07 19 W
ELEVATION: 820 Metres

NORTHING: 6600864
EASTING: 662845

LOCATION ACCURACY: Within 500M

COMMENTS: Located in Tam 45 to 48 claims (mainly Tam 46 and 48), halfway between Teeter and Mould creeks, 11 kilometres north-northeast of settlement of Liard River on Alaska Highway (Assessment Report 3975, Maps 4, 14).

COMMODITIES: Fluorite Barite

MINERALS

SIGNIFICANT: Fluorite Witherite Barite Barytocalcite

ASSOCIATED: Magnetite

COMMENTS: High concentration, in one argillite outcrop.

ALTERATION: Limonite

COMMENTS: At Teaser showing only.

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform Breccia Vein
CLASSIFICATION: Replacement Hydrothermal Epigenetic Industrial Min.

TYPE: E11 Carbonate-hosted fluorspar

DIMENSION: 275 x 60 x 15 Metres STRIKE/DIP:

COMMENTS: Length and maximum width and thickness of highly mineralized zone in southeast. Subhorizontal attitude. TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Middle Devonian Undefined Group
Upper Devonian Undefined Group

Dunedin
Besa River

LITHOLOGY: Brecciated Limestone
Brecciated Shale
Fossiliferous Limestone
Black Argillite
Black Slate

HOSTROCK COMMENTS: Dunedin Formation exposed in core of open anticline, below Besa River Formation. Mineralization straddles unconformity.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Hyland Highland

TERRANE: Ancestral North America

COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1972

SAMPLE TYPE: Drill Core

COMMODITY

GRADE

Fluorite

37.0000 Per cent

COMMENTS: Hole 72-37, over 20 metres.

REFERENCE: Assessment Report 3975.

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1972

SAMPLE TYPE: Bulk Sample

COMMODITY

GRADE

Fluorite

42.9400 Per cent

COMMENTS: "Head assay" of bulk sample number 5, of limestone breccia.

REFERENCE: Assessment Report 3840.

CAPSULE GEOLOGY

The Fire fluorite showing is situated in the Tam 45 to 48 claims (mainly Tam 46 and 48), halfway between Teeter and Mould creeks, 11 kilometres north-northeast of the settlement of Liard River on the Alaska Highway (Assessment Report 3975, Maps 4, 14), in one of the most important areas of fluorite mineralization in British Columbia. The small Teaser showing, situated 1.4 kilometres east of the Fire showing, is attached to this occurrence for convenience; it is described at the end.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Fire showing is one of many similar fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. This belt is defined by an open anticline, with a gently south-plunging axis, in the Upper Devonian Besa River Formation, with the Middle Devonian Dunedin Formation exposed in a several-kilometre wide zone in the core of the fold. All the fluorite deposits in the belt are situated at or just above or below the unconformity between these units.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is commonly characterized by brecciation and is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975). The mineral deposits in the Liard fluorite belt generally occur as lenticular replacement bodies or infillings in breccias in one or both of the units.

The Fire occurrence is on the crest of the anticline referred to above, at the contact between the Dunedin limestone and Besa River shale. The limestone is generally subhorizontal, and is capped by several areas of shale. In the southeast of this area is a narrow, highly mineralized zone, 275 metres long and between 30 and 60 metres wide. Fluorite with witherite and barytocalcite mineralization is predominantly hosted in shale breccia, with some in underlying limestone breccia (Assessment Report 3975; Geology, Exploration and Mining in British Columbia 1972). The mineralization is typically less than 15 metres thick. A bulk sample of the limestone breccia (number 5) contained a "head assay" of 42.94 per cent CaF₂ (Assessment Report 3840). One outcrop of argillite at the Fire showing contains a high concentration of disseminated magnetite (Geology, Exploration and Mining in British Columbia 1972).

Bulldozer trenching over an additional 500 metres to the northwest uncovered similar mineralization, mostly in shale or shale breccia, with values up to 10 per cent CaF₂; minor witherite and barite are present locally (Assessment Report 3975). In the extreme northwest, diamond drilling demonstrated that limestone breccia beneath the shale is rich in fluorite, with one intersection (hole 72-37) grading 37 per cent CaF₂ over 20 metres (Assessment Report 3975). Drilling was insufficient to establish the extent of this zone.

The Teaser showing consists of limestone, limestone breccia and argillite breccia in an area 180 metres square (Geology, Exploration and Mining in British Columbia 1972). Witherite, some barytocalcite and rare fluorite occur in small scattered patches. The showing is notable for a prominent area of yellow and brown limonitic gossan in the northwest corner.

Fission-track studies of fluorite from the Gem prospect 7 kilometres to the south-southeast suggest that the age of the mineralization in this region is Mississippian (Open File 1992-16).

BIBLIOGRAPHY

- EMPR ASS RPT 3840, *3975
- EMPR FIELDWORK 1988, pp. 478-479
- EMPR GEM 1972-587
- EMPR IND MIN FILE (Fluorite Occurrences in BC, (GEM) (in Ministry Library))
- EMPR OF *1992-16, pp. 33-40
- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

MINFILE NUMBER: **094M 007**

NATIONAL MINERAL INVENTORY:

NAME(S): **CORAL-CAMP**, CORAL CAMP,
LIARD FLUORSPAR, THOR

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M09E
BC MAP:

LATITUDE: 59 31 32 N
LONGITUDE: 126 05 35 W
ELEVATION: 1140 Metres

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Coral showing in Tam 23 and 24 claims, 1 kilometre west of head of Mould Creek, 12 kilometres north of settlement of Liard River on Alaska Highway (Assessment Report 3975, Maps 4, 8).

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

NORTHING: 6602171
EASTING: 664424

COMMODITIES: Fluorite Barite

MINERALS

SIGNIFICANT: Fluorite Witherite Barite

ASSOCIATED: Barytocalcite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Breccia Vein Podiform
CLASSIFICATION: Replacement Hydrothermal Epigenetic Industrial Min.

TYPE: E11 Carbonate-hosted fluorspar Metres STRIKE/DIP: 090/15S TREND/PLUNGE:

DIMENSION: Metres
COMMENTS: General attitude of Coral mineralized zone, on east flank of south-plunging anticline.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Upper Devonian	Undefined Group	Besa River	

LITHOLOGY: Brecciated Limestone
Brecciated Shale
Fossiliferous Limestone
Black Argillite
Black Slate

HOSTROCK COMMENTS: Dunedin Formation exposed in core of open anticline, below Besa River Formation. Mineralization straddles unconformity.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland

TERRANE: Ancestral North America

COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Drill Core
COMMODITY Fluorite GRADE 39.0000 Per cent
COMMENTS: Hole 72-43, over 26.5 metres.
REFERENCE: Assessment Report 3975.

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Bulk Sample
COMMODITY Fluorite GRADE 64.8800 Per cent
COMMENTS: Bulk sample number 4 from Coral showing.
REFERENCE: Assessment Report 3840.

CAPSULE GEOLOGY

This fluorite occurrence is an amalgamation of two showings, the Coral and Camp fluorite "prospects" (Assessment Report 3975). They have been combined because they are similar and only 450 metres apart. They are situated in the Tam claims just west of the head of Mould Creek, 12 kilometres north of the settlement of Liard River on

CAPSULE GEOLOGY

the Alaska Highway (Assessment Report 3975, Maps 4, 8), in one of the most important areas of fluorite mineralization in British Columbia.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Coral-Camp showing is one of many similar fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. This belt is defined by an open anticline, with a gently south-plunging axis, in the Upper Devonian Besa River Formation, with the Middle Devonian Dunedin Formation exposed in a several-kilometre wide zone in the core of the fold. All the fluorite deposits in the belt are situated at or just above or below the unconformity between these units. The Coral-Camp occurrence is on the east-dipping flank of the anticline.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is commonly characterized by brecciation and is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975). The mineral deposits in the Liard fluorite belt generally occur as lenticular replacement bodies or as infillings in breccias in one or both of the units.

The Coral mineralization, on the Tam 23 and 24 claims, is at the limestone-shale contact, which dips gently southwards between 15 and 20 degrees (Assessment Report 3975; Geology, Exploration and Mining in British Columbia 1972). In general, the best mineralization is in limestone breccia, the matrix of which is replacement fluorite and witherite, with minor barite and barytocalcite. The largest surface exposure of mineralization at the Coral is at the west end but it appears to be thin. In the main showings to the east, diamond drilling (hole 72-43) has intersected good thicknesses of mineralized limestone breccia, including 26.5 metres of 39 per cent CaF₂ (Assessment Report 3975). Several 3-metre long channel samples were assayed at up 88 per cent fluorite, and a bulk sample (number 4) from here was assayed at 64.88 per cent CaF₂ (Assessment Report 3840; Geology, Exploration and Mining in British Columbia 1972). The overlying shale breccia has thinner and lower grade mineralization, including minor witherite. Some high grade fluorite occurs in limestone substantially below the shale contact and the limestone breccia.

The Camp sub-area, on the Tam 6 and 21 mineral claims, is also at the Dunedin limestone-Besa River shale contact (Assessment Report 3975; Geology, Exploration and Mining in British Columbia 1972). It is essentially an area, 45 metres across, of shale breccia with replacement fluorite and witherite. The underlying limestone is locally brecciated and mineralized with fluorite and barite, or veined with fluorite. Trenching in the surrounding areas exposed barren shale.

Fission-track studies of fluorite from the Gem prospect 8 kilometres to the south suggest that the age of the mineralization in this region is Mississippian (Open File 1992-16).

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- EMPR ASS RPT 3840, *3975
- EMPR FIELDWORK 1988, pp. 478-479
- EMPR GEM 1972-587
- EMPR IND MIN FILE (Fluorite Occurrences in BC, (GEM) (in Ministry Library))
- EMPR OF *1992-16, pp. 33-40
- EMPR PF (Survey map of workings, 1:600)
- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **SMITH**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M16E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 55 15 N
LONGITUDE: 126 13 26 W
ELEVATION: 865 Metres

NORTHING: 6645849
EASTING: 655185

LOCATION ACCURACY: Within 1 KM

COMMENTS: Located in approximate centre of Smith claims, 9 kilometres east-northeast of confluence of Shaw Creek and Smith River, 57 kilometres north of settlement of Liard River on Alaska Highway (Assessment Report 11310, Figure 1b).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
COMMENTS: No details of mineralization available.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Silurian-Devonian	Unnamed/Unknown Group	Unnamed/Unknown Formation	

LITHOLOGY: Quartzite
Limestone
Dolomite

HOSTROCK COMMENTS: Mineralization hosted in quartzite, possibly part of Silurian and Devonian carbonate units.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Hyland Highland

INVENTORY

ORE ZONE: SAMPLE	REPORT ON: N
CATEGORY: Assay/analysis	YEAR: 1983
SAMPLE TYPE: Rock	
<u>COMMODITY</u>	<u>GRADE</u>
Silver	14.4000 Grams per tonne
Copper	1.8600 Per cent

COMMENTS: Maximum grades from mineralized zone.
REFERENCE: Assessment Report 11310, page 2.

CAPSULE GEOLOGY

The Smith occurrence is a poorly documented copper-silver showing, located in the Smith claims, 9 kilometres east-northeast of the confluence of Shaw Creek and Smith River, 57 kilometres north of the settlement of Liard River on the Alaska Highway (Assessment Report 11310, Figure 1b).

The region is underlain by Cambrian to Devonian calcareous and siliciclastic sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The regional mapping indicates that a major normal fault passes through the claims, juxtaposing Middle Devonian limestone and dolostone to the east against Middle Silurian dolostone to the west. There are no geological details on the property, only a reference to a mineralized zone in quartzite (Assessment Reports 11310, 11318). How this relates to the regional geology is not clear.

Preliminary work on the mineralized zone indicated grades of up to 1.86 per cent copper and 14.4 grams per tonne silver (Assessment Reports 11310, 11318). Follow-up work consisted of soil surveys along strike.

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EMPR EXPL 1983-490

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1561
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR ASS RPT 11310, 11318
GSC MAP 46-1962; 1712A; 1713A

DATE CODED: 1995/03/08
DATE REVISED: 1995/03/08

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

CAPSULE GEOLOGY

sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Cliff showing is one of many similar and significant fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. This belt is defined by an open anticline, with a gently south-plunging axis, in the Upper Devonian Besa River Formation, with the Middle Devonian Dunedin Formation exposed in a several-kilometre wide zone in the core of the fold. All the fluorite deposits in the belt are situated at or just above or below the unconformity between these units.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is commonly characterized by brecciation and is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975). The mineral deposits in the Liard fluorite belt generally occur as lenticular replacement bodies or infillings in breccias in one or both of the

The Cliff occurrence is on the west-dipping flank of the anticline referred to above, although bedding attitudes are variable because of the generally low dips. Most of the area consists of Dunedin limestone, exposed in north-trending cliffs over a length of 150 metres and a width of up to 30 metres. A few outcrops of Besa River shale or shale breccia are present, possibly occupying narrow, north-striking, fault-controlled structures. A chip sample in the main shale breccia outcrop contained 70 per cent CaF₂ over 3 metres (Assessment Report 3975, Map 16). Elsewhere, thin mineralization was found at the shale's contact with the limestone by diamond drilling (hole 72-38).

The main mineralization at the Cliff is in limestone breccia or limestone (Assessment Report 3975; Geology, Exploration and Mining in British Columbia 1972). It is unusual for the Liard region, occurring as a horizontal banding of fluorite, mostly colourless but locally purple, and as fluorite veins. Also it is quite siliceous, possibly a relict of siliceous zones in the limestone, or possibly a by-product of the fluorite replacement (Assessment Report 3975). Diamond drill hole 72-39 contained 39.6 per cent CaF₂ over 15.25 metres (Assessment Report 3975, Map 16).

Fission-track studies of fluorite from the Gem prospect 8.5 kilometres to the south-southeast suggest that the age of the mineralization in this region is Mississippian (Open File 1992-16).

BIBLIOGRAPHY

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- EMPR FIELDWORK 1988, pp. 478-479
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- EMPR IND MIN FILE (Fluorite Occurrences in BC, (GEM) (in Ministry Library))
- EMPR OF *1992-16, pp. 33-40
- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **TEE**, LIARD FLUORSPAR, THOR

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094M09E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 59 35 39 N
LONGITUDE: 126 05 27 W
ELEVATION: 977 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6609813
EASTING: 664215

LOCATION ACCURACY: Within 500M

COMMENTS: Located in centre of mineralized area in Tee 3, 5, 16 and 18 claims, 600 metres west of Teeter Creek, 5 kilometres east-northeast of Mount Halkett, 20 kilometres north of settlement of Liard River on Alaska Highway (Assessment Report 3975, Maps 5, 10).

COMMODITIES: Fluorite Barite

MINERALS

SIGNIFICANT: Fluorite Barite Witherite
COMMENTS: Fluorite is colourless. Minor barite and witherite.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Breccia Vein Podiform
CLASSIFICATION: Replacement Hydrothermal Epigenetic Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar
DIMENSION: 200 x 60 x 18 Metres STRIKE/DIP: 360/25E TREND/PLUNGE:
COMMENTS: Area and thickness of largest zone of mineralization (Zone B).
Approximate attitude of mineralized contact.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Upper Devonian	Undefined Group	Besa River	

LITHOLOGY: Brecciated Limestone
Brecciated Shale
Fossiliferous Limestone
Black Argillite
Black Slate

HOSTROCK COMMENTS: Dunedin Formation overlies Besa River Formation. Mineralization straddles unconformity.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America
COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Drill Core
COMMODITY Fluorite GRADE 8.8000 Per cent
COMMENTS: Hole number 63, in fractured limestone, over 18 metres.
REFERENCE: Assessment Report 3975, page 7.

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Chip
COMMODITY Fluorite GRADE 73.4000 Per cent
COMMENTS: Assessment Report 3975.
REFERENCE: Chip sample 2026, from Zone A.

CAPSULE GEOLOGY

The Tee fluorite prospect is situated in the Tee 3, 5, 16 and 18 claims, just west of Teeter Creek, 5 kilometres east-northeast of Mount Halkett, 20 kilometres north of the settlement of Liard River on the Alaska Highway (Assessment Report 3975, Maps 5, 10). It is part of one of the most important areas of fluorite mineralization in

CAPSULE GEOLOGY

British Columbia.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Tee prospect is one of many similar fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. All the deposits in the belt occur at or just above or below the unconformity between the Middle Devonian Dunedin Formation and the Upper Devonian Besa River Formation. The Tee is the farthest north of the fluorite deposits in the belt, lying along the north-trending, moderately east-dipping contact between these units.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is generally marked by brecciation and is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975; Geology, Exploration and Mining in British Columbia 1972). The mineral deposits in the Liard fluorite belt generally occur as lenticular replacement bodies or infillings in breccias in one or both of the units.

Mineralization at the Tee showing is generally concentrated at the Dunedin-Besa River contact, which dips approximately east at 25 degrees. Four zones, designated A to D, have been defined (Assessment Report 3975, Map 10). The most northerly is zone A, consisting of remnants of highly mineralized limestone breccia and lesser shale breccia. It has been mapped over an area 90 by 67 metres. The best mineralization is 4.6 metres thick. Chip sample 2026 contained 73.4 per cent CaF₂ (Assessment Report 3975). The fluorite is colourless, very unusual for the region.

Zone B is the largest sub-area, measuring 200 by 60 metres, and is also at the limestone-shale contact. The main mineralization consists of lenses of complete replacement of shale and limestone breccias by fluorite. Beneath it, the main Dunedin limestone is locally fractured and rich in veins and lenses of fluorite and some barite. Good mineralization is at the west end of the zone and has an aggregate thickness of 18 metres. Chip sample 2027 from here contained 44.2 per cent fluorite (Assessment Report 3975).

Mineralization at zone C is exposed around some limestone cliffs, as discontinuous lenses of massive fluorite. Its volume is not significant.

Zone D is a small area of fluorite-bearing shale breccia, with minor witherite. It may be significant because regionally, mineralized Besa River shale such as at zone D tends to overlie strongly mineralized limestone breccia. This possibility was tested by diamond drilling; the results were encouraging but inconclusive (Assessment Report 3975). Drill hole number 63 intersected fluorite-bearing fractured limestone with an average grade of 8.8 per cent CaF₂ over 18 metres (Assessment Report 3975).

More geochemical analyses are given in Open File 1992-16 (page 35), although it is not clear what zones they represent.

Fission-track studies of fluorite from the Gem prospect 16 kilometres to the south suggest that the age of the mineralization is Mississippian (Open File 1992-16).

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- EMPR FIELDWORK 1988, pp. 478-479
- EMPR GEM 1972-587
- EMPR IND MIN FILE (Fluorite Occurrences in BC, (GEM) (in Ministry Library))
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- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/07

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REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 011**

NATIONAL MINERAL INVENTORY:

NAME(S): **STRAP**, LIARD FLUORSPAR, THOR

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 35 03 N
LONGITUDE: 126 07 07 W
ELEVATION: 1225 Metres

NORTHING: 6608631
EASTING: 662696

LOCATION ACCURACY: Within 500M

COMMENTS: Located in Tee 126 claim, halfway between Teeter Creek and Mount Halkett, 19 kilometres north of settlement of Liard River on Alaska Highway (Assessment Report 3975, Maps 5, 23).

COMMODITIES: Fluorite Barite

MINERALS

SIGNIFICANT: Fluorite Barite
ASSOCIATED: Witherite Barytocalcite
ALTERATION: Limonite Goethite
COMMENTS: In one, separate outcrop.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Podiform
CLASSIFICATION: Replacement Hydrothermal Epigenetic Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar E10 Carbonate-hosted barite
DIMENSION: 180 x 12 Metres STRIKE/DIP: TREND/PLUNGE: /
COMMENTS: Area of mineralized zone, in limestone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Upper Devonian	Undefined Group	Besa River	

LITHOLOGY: Fossiliferous Limestone
Shale

HOSTROCK COMMENTS: Besa River Formation unconformably overlies Dunedin Formation. Mineralization straddles unconformity.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America
COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: SOUTHEAST REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Chip
COMMODITY: Fluorite GRADE: 28.6000 Per cent
COMMENTS: Chip sample over 7.6 by 6 metre area
REFERENCE: Assessment Report 3975, page 13.

CAPSULE GEOLOGY

The Strap is a minor fluorite showing, situated in the Tee 126 claim, halfway between Teeter Creek and Mount Halkett, 19 kilometres north of the settlement of Liard River on the Alaska Highway (Assessment Report 3975, Maps 5, 23). It is part of one of the most important areas of fluorite mineralization in British Columbia.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Strap showing is one of many similar fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. All the deposits in the belt occur at or just above or below the unconformity between the Middle Devonian Dunedin Formation and the Upper Devonian Besa River Formation. The Strap is in the far north of the fluorite belt.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst

CAPSULE GEOLOGY

and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is generally marked by brecciation and is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975). The mineral deposits in the Liard fluorite belt generally occur as lenticular replacement bodies or infillings in breccias in one or both units.

Most of the Strap showing area is underlain by subhorizontal, unmineralized Dunedin limestone. One small outcrop of shale indicates that the limestone is close to the contact with the Besa River Formation. The other common indicator of the unconformity, limestone or shale breccia, does not appear to be present.

Mineralization is restricted to a narrow zone, intermittently exposed for a length of 180 metres and a width of 12 metres. It consists of a replacement assemblage of fluorite, barite and lesser witherite and barytocalcite. A chip panel sample, taken over one zone measuring 7.5 by 6 metres, assayed 28.6 per cent CaF₂ (Assessment Report 3975, Map 23). Another limestone outcrop contains patches of minor fluorite. Elsewhere, an exposure, 12 metres long, consists of massive limonite and goethite.

The full extent and depth of the mineralization are not known, but present indications are that neither is very significant.

Fission-track studies of fluorite from the Gem prospect 15 kilometres to the south suggest that the age of the mineralization is Mississippian (Open File 1992-16).

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- EMPR IND MIN FILE (Fluorite Occurrences in BC, (GEM) (in Ministry Library))
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- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **NICK NIK, LIARD FLUORSPAR
THOR**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M09E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 31 44 N
LONGITUDE: 126 09 29 W
ELEVATION: 777 Metres

NORTHING: 6602383
EASTING: 660733

LOCATION ACCURACY: Within 500M

COMMENTS: Located on boundary between West 87 and 89 claims, on small circular hill 400 metres west of Teeter Creek, 13 kilometres north-northwest of settlement of Liard River on Alaska Highway (Assessment Report 3975, Maps 4, 19).

COMMODITIES: Fluorite

MINERALS

SIGNIFICANT: Fluorite

ASSOCIATED: Witherite Barytocalcite

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Breccia Vein
CLASSIFICATION: Replacement Hydrothermal Epigenetic Industrial Min.

TYPE: E11 Carbonate-hosted fluorspar

DIMENSION: 120 Metres STRIKE/DIP:

COMMENTS: Maximum dimension of mineralized area, generally subhorizontal. TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Upper Devonian Undefined Group Besa River

LITHOLOGY: Brecciated Shale
Shale

GEOLOGICAL SETTING

TECTONIC BELT: Foreland

PHYSIOGRAPHIC AREA: Hyland Highland

TERRANE: Ancestral North America

COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1972

SAMPLE TYPE: Rock

COMMODITY

GRADE

Fluorite

17.3000

Per cent

COMMENTS: Best sample (2031), from mineralized shale breccia.

REFERENCE: Assessment Report 3975, Map 19.

CAPSULE GEOLOGY

The Nick or Nik fluorite showing is situated on the boundary between the West 87 and 89 claims, on a small circular hill 400 metres west of Teeter Creek, 13 kilometres north-northwest of the settlement of Liard River on the Alaska Highway (Assessment Report 3975, Maps 4, 19), in one of the most important areas of fluorite mineralization in British Columbia.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Nick showing is one of many similar fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. This belt is defined by an open anticline, with a gently south-plunging axis, in the Upper Devonian Besa River Formation, with the Middle Devonian Dunedin Formation exposed in a several-kilometre wide zone in the core of the fold. All the fluorite deposits in the belt are situated at or just above or below the unconformity between these units.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation

CAPSULE GEOLOGY

is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is commonly characterized by brecciation and is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975; Geology, Exploration and Mining in British Columbia 1972). The deposits in the Liard fluorite belt generally occur as lenticular replacement bodies or infillings in breccias in one or both units.

The Nick showing is on the west-dipping flank of the anticline referred to above, although bedding is subhorizontal here. The showing area is only about 120 metres across and is poorly exposed. All outcrops or trenches consist of Besa River shale or brecciated shale. Mineralization is generally confined to the breccia and consists of fluorite, witherite and barytocalcite which form a replacement matrix. The best sample (2031) taken from this material contained 17.3 per cent CaF₂ (Assessment Report 3975, Map 19). These minerals may also occur in sparse fracture-filling veins in shale.

The experience at other showings in this region suggests that mineralized limestone breccia could lie below the shale breccia at the Nick, but this has not been tested by drilling.

Fission-track studies of fluorite from the Gem prospect 9 kilometres to the south-southeast suggest that the age of the mineralization in this region is Mississippian (Open File 1992-16).

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- EMPR FIELDWORK 1988, pp. 478-479
- EMPR GEM 1972-587
- EMPR IND MIN FILE (Fluorite Occurrences in BC, (GEM) (in Ministry Library))
- EMPR OF *1992-16, pp. 33-40
- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/07

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REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **BAR**, TAM, LIARD FLUORSPAR

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 29 06 N
LONGITUDE: 126 05 33 W
ELEVATION: 868 Metres

NORTHING: 6597659
EASTING: 664653

LOCATION ACCURACY: Within 500M

COMMENTS: Located 300 metres southeast of Mould Creek, in Tam 43 claim, 7.5 kilometres north of settlement of Liard River on Alaska Highway (Assessment Report 3975, Maps 4, 21).

COMMODITIES: Fluorite Barite

MINERALS

SIGNIFICANT: Fluorite Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Podiform Vein Disseminated
CLASSIFICATION: Replacement Hydrothermal Epigenetic Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar E10 Carbonate-hosted barite
DIMENSION: 90 x 30 Metres STRIKE/DIP: 360/45E TREND/PLUNGE:
COMMENTS: Approximate area of mineralization. Strike of bedding varies from northwest to northeast.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Fossiliferous Limestone
Brecciated Limestone

HOSTROCK COMMENTS: Dunedin Formation forms core of open anticline. Mineralization is probably just below unconformity with overlying Besa River Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America
COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Chip
COMMODITY GRADE
Fluorite 51.0000 Per cent
COMMENTS: Chip sample 2013, over about 9 metres, from limestone breccia.
REFERENCE: Assessment Report 3975, page 12, Map 21.

CAPSULE GEOLOGY

The Bar fluorite showing is situated in the Tam 43 claim, 7.5 kilometres north of the settlement of Liard River on the Alaska Highway (Assessment Report 3975, Map 4), in one of the most important areas of fluorite mineralization in British Columbia. It is a minor occurrence, but it affirms the widespread nature of this type of mineralization in the Liard River area, lying as it does halfway between the more significant Gem and Tam prospects, in the same setting.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Bar showing is one of many fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. This belt is defined by an open anticline, with a gently south-plunging axis, in the Upper Devonian Besa River Formation, with the Middle Devonian Dunedin Formation exposed in a several-kilometre wide zone in the core of the fold. All the fluorite deposits in the belt are situated at or just above or below the unconformity between these units.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in

CAPSULE GEOLOGY

the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is typically marked by brecciation and is very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975; Geology, Exploration and Mining in British Columbia 1972). The mineral deposits in the Liard fluorite belt generally consist of lenticular replacement bodies or infillings in breccias in one or both units.

The Bar occurrence is on a steep northeast-facing slope, 300 metres southeast of Mould Creek (Assessment Report 3975, Maps 4, 21). Mineralization consists mainly of fluorite and barite in massive lenses, veins and disseminations in massive or highly fractured limestone of the Dunedin Formation, which here strikes northeast or northwest and dips about 45 degrees east. Some of the mineralization is in the form of fracture-fillings in highly brecciated limestone. The mineralization occurs over an area about 90 metres in length by 30 metres in width.

Chip samples taken across the better mineralized sections returned values of 51, 35 and 31 per cent CaF₂ (Assessment Report 3975, page 12). The best sample, over about 9 metres, came from an outcrop of mineralized limestone breccia (Assessment Report 3975, Map 21).

Fission-track studies of fluorite from the Gem prospect, 3.5 kilometres to the south, suggest that the age of the mineralization in the region is Mississippian (Open File 1992-16, page 37).

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- EMPR OF *1992-16, pp. 33-40
- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
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CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 014**

NATIONAL MINERAL INVENTORY:

NAME(S): **HENRY**, LIARD FLUORSPAR, THOR

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M08E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 59 28 41 N
LONGITUDE: 126 05 50 W
ELEVATION: 1015 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6596875
EASTING: 664420

LOCATION ACCURACY: Within 500M

COMMENTS: Located in centre of mineralized area, in Gem 27 claim, 500 metres east of Mould Creek, 3 kilometres north of settlement of Liard River on Alaska Highway (Assessment Report 3975, Maps 4, 20).

COMMODITIES: Fluorite

MINERALS

SIGNIFICANT: Fluorite Witherite
ASSOCIATED: Barytocalcite Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Vein Podiform
CLASSIFICATION: Replacement Hydrothermal Epigenetic Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar
DIMENSION: 30 x 6 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Diameter and approximate thickness of best mineralized zone, in north of showing. Bedding dips gently east or southeast.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Middle Devonian Undefined Group Dunedin

LITHOLOGY: Fossiliferous Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America
COMMENTS: Part of 17-kilometres long fluorite belt, north of Liard Hot Springs.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Chip
COMMODITY: Fluorite GRADE: 44.9000 Per cent
COMMENTS: Best chip sample assay, from best zone.
REFERENCE: Assessment Report 3975, Map 20.

CAPSULE GEOLOGY

The Henry fluorite showing is situated in the Gem 27 claim, 500 metres east of Mould Creek, 3 kilometres north of the settlement of Liard River on the Alaska Highway (Assessment Report 3975, Maps 4, 20), in one of the most important areas of fluorite mineralization in British Columbia.

The region is underlain by Lower to Upper Paleozoic, platformal sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Henry showing is one of many similar fluorite deposits in a 17-kilometre long belt extending north from Liard Hot Springs Provincial Park. This belt is defined by an open anticline, with a gently south-plunging axis, in the Upper Devonian Besa River Formation, with the Middle Devonian Dunedin Formation exposed in a several-kilometre wide zone in the core of the fold. All the fluorite deposits in the belt are situated at or just above or below the unconformity between these units.

The Dunedin Formation consists of mid- to dark grey, massive to thinly-bedded fossiliferous limestone. It is generally exposed in the Teeter and Mould creek valleys, which are characterized by karst and 'mesa and butte' topography. The overlying Besa River Formation is predominantly black shale or slate and argillite, with some calcareous shale and minor, buff-brown dolomitic layers. The unconformity between the units is characterized by brecciation and is

CAPSULE GEOLOGY

very irregular in detail, probably due to an erosional or disconformable relationship between them, or to later faulting along the contact (Assessment Report 3975). The mineral deposits in the Liard fluorite belt generally consist of lenticular replacement bodies or infillings in breccias in one or both units.

The Henry occurrence is near the crest of an anticline, possibly the main anticline referred to above, which is visible in limestone cliffs along strike to the south (Assessment Report 3975). It is just east of the hinge, and bedding dips gently to the east or southeast. No Besa River shale is present, and most of the outcrop comprises Dunedin Formation limestone, some with erratic patches or stringers of fluorite and barytocalcite.

Within the limestone are a few small areas of very strong replacement mineralization consisting of fluorite, witherite and calcite. The thickness of mineralization is generally around 6 metres, and the grades are good, but the zones appear to be of limited extent. In the best zone, 30 metres across in the north of the showing, three 6-metre long chip samples ranged from 13.7 to 44.9 per cent CaF₂ (Assessment Report 3975, Map 20). Another zone to the south, 20 by 12 metres, contained similar values, including 52.4 per cent CaF₂ over 5.5 metres (Assessment Report 3975, Map 20).

Fission-track studies of fluorite from the Gem prospect, 3 kilometres to the south, suggest that the age of the mineralization in the region is Mississippian (Open File 1992-16).

BIBLIOGRAPHY

- EMPR ASS RPT 3840, *3975
- EMPR FIELDWORK 1988, pp. 478-479
- EMPR GEM 1972-587
- EMPR IND MIN FILE (Fluorite Occurrences in BC, (GEM) (in Ministry Library))
- EMPR OF *1992-16, pp. 33-40
- GSC BULL 186
- GSC MAP 46-1962; 1712A; 1713A
- GSC P 72-32, p. 20
- CJES, Vol. 15, pp. 1391-1406
- N MINER, Vol. 57, No. 33, 1972

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/07

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 015**

NATIONAL MINERAL INVENTORY:

NAME(S): **MCCULLOUGH'S BAR**

STATUS: Past Producer
REGIONS: British Columbia
NTS MAP: 094M10E 094M10W
BC MAP:

Open Pit

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 35 25 N
LONGITUDE: 126 36 46 W
ELEVATION: 457 Metres

NORTHING: 6608205
EASTING: 634778

LOCATION ACCURACY: Within 5 KM

COMMENTS: Located approximately from descriptions, and on old placer mineral lease 794, on north bank of Liard River, 8 kilometres northwest of confluence with Smith River (Minister of Mines Annual Report 1897; Property File - Claim Map).

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Gold
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Quaternary

Undefined Group

Undefined Formation

LITHOLOGY: Gravel

HOSTROCK COMMENTS: Gravels in bars of the Liard River.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Rabbit Plateau

CAPSULE GEOLOGY

This occurrence deals with placer mining on part of the Liard River, carried out in the 1870s and possibly at undocumented times later. The location is approximate, based on descriptions in early reports of the Ministry and the Geological Survey of Canada, and on the position of old placer mineral leases along a several-kilometre long stretch of the Liard River. This stretch is about halfway between the settlement of Coal River on the Alaska Highway and the mouth of the Smith River, the site of the former Hudson's Bay Company trading post at Fort Halkett (Minister of Mines Annual Report 1874, 1897; Geological Survey of Canada Paper 44-28, page 27; Bulletin 28, Figure 2, site 41).

Gold was discovered on bars of the Liard River at this location in 1871 or 1872 (Geological Survey of Canada Summary Report 1925, Part A). The main site became known as McCullough's (or McCulloch's) Bar, after the main discoverer. The location of this particular bar is not clear, but the map coordinates given are on a bar which is likely at or within a few kilometres of the principal discovery. In subsequent years, miners worked this and other bars along this stretch of the river. The gold was "as fine as flour", and was collected by means of mercury (Minister of Mines Annual Report 1874). There is also a reference to workings at another gold-bearing bar on the river 25 kilometres to the west, at the mouth of the Rabbit River (Minister of Mines Annual Report 1897).

The amount of gold recovered from McCullough's Bar is not known, as apparently the numbers were combined with production from the Dease Lake and Cassiar placer mining districts which were also being developed at this time. However, one account stated that the bar "pays per day to the rocker from one to three ounces", or 34 to 103 grams (Minister of Mines Annual Report 1874). Another record suggests that the Liard River produced a total of 48,720 grams, but it is not clear if all this came from McCullough's Bar (Bulletin 28, page 57 and Figure 2, site 41). Overall, the site proved to be of little value at the time, at least compared with the richer Dease Lake area (Geological Survey of Canada Summary Report 1925, Part A).

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1575
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR AR 1874-11; 1897-520
EMPR BULL 28-57
EMPR PF (Claim Map)
GSC SUM RPT 1925 Part A, p. 39A
GSC P 44-28, p. 27; 72-32, p. 21

DATE CODED: 1995/03/09
DATE REVISED: 1995/03/09

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOYA WEST HILL**, BOYA 7

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094M05E 094M04E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 59 15 07 N
LONGITUDE: 127 32 04 W
ELEVATION: 855 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6569025
EASTING: 583579

LOCATION ACCURACY: Within 500M

COMMENTS: Located on West Hill showing in Boya 7 claim, 11.5 kilometres north-northeast of confluence of Turnagain and Kechika rivers (Assessment Report 7252, Figure 4N).

COMMODITIES: Tungsten Molybdenum Copper Zinc Lead
Bismuth

MINERALS

SIGNIFICANT: Scheelite Molybdenite Chalcopyrite Arsenopyrite Sphalerite
Galena Bismuthinite

COMMENTS: Last four are in minor or trace amounts.

ASSOCIATED: Quartz Carbonate Pyrrhotite Pyrite

ALTERATION: Sericite Carbonate Chlorite

ALTERATION TYPE: Skarn Sericitic Chloritic

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Massive Vein Disseminated
CLASSIFICATION: Skarn Porphyry Igneous-contact Hydrothermal
TYPE: K05 W skarn K07 Mo skarn
L07 Porphyry W L05 Porphyry Mo (Low F- type)

SHAPE: Irregular
DIMENSION: 600 x 600 Metres STRIKE/DIP: 070/90 TREND/PLUNGE:

COMMENTS: Approximate surface area of West Hill-Night Hawk Hill area. General orientation of quartz veins.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Paleozoic Unnamed/Unknown Group Unnamed/Unknown Formation Unnamed/Unknown Informal
Unknown

LITHOLOGY: Pyrrhotite Diopside Quartz Skarn
Quartz Diopside Calc-silicate
Quartz Biotite Feldspar Porphyry
Aplitic Quartz Porphyry
Biotite Hornfels
Marble
Massive Limestone
Shale
Siltstone
Quartz Sandstone

HOSTROCK COMMENTS: Stratified rocks are Cambrian and Ordovician, and possibly partly Upper Proterozoic. Age of intrusives unknown, possibly Mesozoic.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Rabbit Plateau

TERRANE: Ancestral North America

METAMORPHIC TYPE: Contact RELATIONSHIP: Syn-mineralization GRADE: Hornfels

COMMENTS: Just northeast of the Northern Rocky Mountain Trench.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1979

SAMPLE TYPE: Drill Core

COMMODITY GRADE
Molybdenum 0.6400 Per cent
Tungsten 0.3800 Per cent

COMMENTS: Actually WO3 and MoS2. Maximum values from drill core from holes B-2-79 and B-3-79; most values are much lower.

REFERENCE: Assessment Report 7431.

CAPSULE GEOLOGY

The Boya West Hill prospect is primarily a tungsten-molybdenum porphyry-skarn deposit, situated in the Boya 7 claim, on the northwest corner of a triangular hill, 11.5 kilometres north-northeast of the confluence of the Turnagain and Kechika rivers (Assessment Report 7252, Figure 4N).

The Boya claims are located over a patchily mineralized area of several square kilometres, exposed on the hill which rises above generally subdued terrain of the Rabbit Plateau. The area is just northeast of the Northern Rocky Mountain Trench, and the hill is underlain by Cambrian and Ordovician rocks, and possibly some Upper Proterozoic rocks, belonging to Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A).

There are several showings in the area. Two MINFILE occurrences have been assigned to cover the most important of them: this occurrence deals with the West Hill showing; another occurrence, the Boya Main Face (094M 021), deals with the Main Face showing 3.5 kilometres to the southeast. Another, less important showing occurs about halfway between them, on "Paint Can Hill", and is described briefly here, at the end.

The West Hill area, which including the nearby Night Hawk Hill measures about 600 metres square, consists of massive limestone underlain by interbedded shales, siltstones and quartz sandstone, and minor carbonate (Assessment Report 7252). These rocks have been variably metamorphosed due to the intrusion of dykes, sills and small stocks of medium-grained quartz-biotite-feldspar porphyry, and quartz porphyry. The aphanitic groundmass in these rocks contains abundant potassium feldspar, where unaltered. Most porphyries are composed of quartz monzonite or granodiorite, whereas more leucocratic varieties are aplitic and only weakly porphyritic (Assessment Report 7252). The age of the intrusions is unknown but they may be Mesozoic (Assessment Report 7252).

The stratified rocks are quite strongly deformed, shown by numerous minor folds with subvertical axial planes and foliation (Assessment Report 7252). The foliation, and bedding and compositional banding in the limestone, all generally strike north-northwest and dip very steeply.

A thermal aureole is developed around the porphyritic intrusions in the West Hill area, extending southeastwards towards the Boya Main Face area. It is marked by hornfelsing, hydrothermal alteration, and mineralization. The shales and siltstones have been converted to purplish-brown, biotite hornfels, and the main limestone contains marble and bands of coarse-grained pyrrhotite-diopside-quartz skarn. Locally, these skarn zones cut across bedding in the limestone, indicating a metasomatic origin (Assessment Report 7252). Between the limestone and the hornfels is a narrow zone of finely banded quartz-diopside calc-silicate rock known in the area as "porcellanite", probably derived from limy shale or siltstone (Assessment Report 7252; Fieldwork 1979).

Hydrothermal alteration is widespread, in the form of progressive chloritic and carbonate-sericite alteration. It is strongest in the intrusions but also affects the metasediments, particularly where they are fractured.

Quartz stockworks and veins are common, both in the porphyries and in fractured and altered metasediments. The quartz or quartz-carbonate veins are typically 2 centimetres thick, but may be much thicker. The density of veining ranges from sparse to 'swarms' of quartz veins, constituting up to 50 per cent of the rock volume. Most veins strike east-northeast and dip steeply.

Probably the main mineralization in the West Hill-Night Hawk Hill areas occurs in diopside-quartz skarn in marble or porcellanite, where lenses, up to 3 metres wide, of massive to semi-massive pyrrhotite contain traces of extremely fine-grained scheelite and chalcopyrite (Assessment Report 7252). Values of tungsten and copper are low, however, averaging (5 assays) approximately 0.09 per cent WO₃ and 0.13 per cent copper (Assessment Report 7252). Two other outcrops of diopside-quartz skarn occur on the southwest side of West Hill, near a small intensely quartz-veined porphyry body. These skarns contain disseminated pyrrhotite and significant molybdenite, with lesser chalcopyrite and scheelite (Assessment Report 7252).

Diamond drilling was done to test the extent and grade of the tungsten-molybdenum mineralization and porphyry alteration (Assessment Reports 7431, 8008, 8024, 9299). The drilling intersected variably altered, fractured and quartz-veined porphyries, hornfelsed metasediments and skarn. Pyrrhotite and pyrite is locally strong but scheelite and molybdenite are erratic and generally only weak to moderate. In addition, minor or trace amounts of arsenopyrite, sphalerite, galena and bismuthinite were found in the drill core. Assays ranged up to only 0.64 per cent MoS₂ and 0.38 per cent WO₃ (Assessment Reports 7431), and most are much lower. A

CAPSULE GEOLOGY

6-metre long interval in hole B-7-79 intersected strong zinc and lead mineralization (Assessment Report 8024).

Paint Can Hill, 1.5 kilometres southeast of the West Hill, is a small area of massive limestone and marble, with bands of coarse-grained garnetiferous skarn (Assessment Report 7252, Figure 4N). There is at least one quartz-feldspar porphyry dyke exposed. The marble contains a zone 10 metres by 30 centimetres with semi-massive mineralization consisting of arsenopyrite, pyrite, sphalerite, chalcopyrite and traces of scheelite. Diamond drilling indicated only very weak mineralization in this area (Assessment Report 9532).

BIBLIOGRAPHY

EM BULL 107, pp. 107-110
EM GEOS MAP 1998-10
EMPR ASS RPT *7252, 7419, 7431, 7915, 8008, 8024, 8081, 9299, 9532
EMPR EXPL 1978-E254, 255; 1979-271, 272; 1980-451, 452; 1981-56
EMPR FIELDWORK 1979, p. 126; 1996, pp. 125-144
EMPR OF 1997-14
GSC MAP 46-1962; 1712A; 1713A
Falconbridge File (Several 1978, 1979 Reports by G.R. Peatfield)

DATE CODED: 1995/03/14
DATE REVISED: 2003/02/12

CODED BY: CJR
REVISED BY: MPS

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 017**

NATIONAL MINERAL INVENTORY:

NAME(S): **TAN**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M04W 104P01E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 02 52 N
LONGITUDE: 127 59 15 W
ELEVATION: 1300 Metres

NORTHING: 6545812
EASTING: 558088

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Zone 1 in Tan 2 claim, 900 metres south of Hidden Valley Creek, 7.5 kilometres northwest of confluence with Major Hart River, in Kechika Ranges (Assessment Report 6840).

COMMODITIES: Zinc Lead Silver Barite

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: Sphalerite is red-brown.
ASSOCIATED: Pyrite Barite Carbonate
ALTERATION: Hydrozincite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Disseminated Podiform Vein
CLASSIFICATION: Hydrothermal Epigenetic
DIMENSION: Metres STRIKE/DIP: 315/60W TREND/PLUNGE:
COMMENTS: Approximate, general attitude of bedding.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Lower Cambrian Atan Unnamed/Unknown Formation

LITHOLOGY: Limestone
Dolomitic Limestone
Slate
Phyllite

HOSTROCK COMMENTS: Cambro-Ordovician Kechika Group also present on claims.

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Cassiar Mountains
TERRANE: Cassiar
COMMENTS: Immediately southwest of the Burnt Rose Fault.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1978
SAMPLE TYPE: Chip
COMMODITY GRADE
Lead 1.6200 Per cent
Zinc 2.3200 Per cent
COMMENTS: Zone 2 chip sample (8659), over 9 metres. More typical of mineralization.
REFERENCE: Assessment Report 6840.

ORE ZONE: ROCK REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1978
SAMPLE TYPE: Grab
COMMODITY GRADE
Silver 3.8000 Grams per tonne
Lead 3.4200 Per cent
Zinc 21.2000 Per cent
COMMENTS: Highest value in Zone 1, grab sample 8507.
REFERENCE: Assessment Report 6840.

CAPSULE GEOLOGY

This lead-zinc-silver showing is located in the Tan mineral claims, 900 metres south of Hidden Valley Creek, 7.5 kilometres northwest of its confluence with Major Hart River, in the mountainous Kechika Ranges (Assessment Report 6840).

CAPSULE GEOLOGY

The area is immediately southwest of the northwest-trending Burnt Rose Fault, and consists of Lower to Middle Paleozoic sedimentary rocks of the Cassiar terrane (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). The Tan claims themselves are underlain by the Lower Cambrian Atan Group and the Cambro-Ordovician Kechika Group (Assessment Report 6840). All units dip moderately to steeply southwest. The Atan Group comprises slate and phyllite which are overlain by massive to thinly laminated limestone; this sequence is repeated by a thrust fault. Another fault separates the Atan Group from calcareous phyllites of the Kechika Group to the southwest.

Mineralization appears to be restricted to the Atan Group limestone (Assessment Report 6840). It consists of disseminations and small pods of sphalerite, galena, hydrozincite and pyrite in thinly laminated limestone in the upper part of the unit. Sphalerite is red-brown, and hydrozincite is very common on rock surfaces. Less commonly, sphalerite occurs in veinlets and small patches in irregularly dolomitized limestone.

The Tan showing is centred on Zone 1 in the Tan 2 claim, where the mineralization is locally high grade but pinches out along strike. One grab sample (8507) assayed 21.2 per cent zinc, 3.42 per cent lead, and 3.8 grams per tonne silver (Assessment Report 6840). Other samples are considerably lower, similar to those from Zone 2 in the Tan 1 claim, 2 kilometres to the southeast, where a chip sample (8659) assayed 2.32 per cent zinc and 1.62 per cent lead over 9 metres (Assessment Report 6840). Zone 2 also contains weakly mineralized carbonate-barite material. Although lower grade, Zone 2 mineralization is thicker and more laterally persistent than Zone 1.

BIBLIOGRAPHY

EMPR EXPL 1978-E253
EMPR ASS RPT *6840
GSC MAP 46-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/13

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **KITZA**, PEG, ROUS,
JW

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094M12E 094M12W
BC MAP:
LATITUDE: 59 34 19 N
LONGITUDE: 127 44 42 W
ELEVATION: 782 Metres

MINING DIVISION: Liard
UTM ZONE: 09 (NAD 83)
NORTHING: 6604411
EASTING: 570901

LOCATION ACCURACY: Within 500M

COMMENTS: Located in approximate centre of wide area of mineralization, in Kitza property 1 kilometre south of Kitza Creek, 9 kilometres west of confluence with Kechika River (Assessment Report 9442, Maps 1, 2).

COMMODITIES: Copper Zinc Barite Lead

MINERALS

SIGNIFICANT: Tetrahedrite Sphalerite Barite Galena Malachite
COMMENTS: Sphalerite is honey brown. Galena is rare.
ASSOCIATED: Quartz Calcite Smithsonite Fluorite
COMMENTS: Fluorite is pale green.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic
DIMENSION: 8000 x 3000 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Overall area of numerous small showings. Bedding is variable, generally striking west-northwest and dipping moderately south.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Cambrian	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Silurian-Devonian	Road River	Undefined Formation	

LITHOLOGY: Limestone
Limy Mudstone
Limy Siltstone
Calcareous Sandstone
Shale
Mudstone
Siltstone
Cherty Mudstone
Tuff

HOSTROCK COMMENTS: Most mineralization occurs in these units.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Just northeast of Kechika Trough.

PHYSIOGRAPHIC AREA: Rabbit Plateau

CAPSULE GEOLOGY

The Kitza prospect covers a wide area of minor copper-zinc mineralization in the Peg, Rous and JW claims, collectively known as the Kitza claims, located on Kitza Creek, 9 kilometres west of its confluence with the Kechika River (Assessment Report 9442, Maps 1 and 2).

The Kitza property area is in Ancestral North America, close to the transition between Paleozoic platformal sedimentary rocks and their more basinal equivalents in the Kechika Trough, the southeastern arm of the Selwyn Basin, to the southwest (Geological Survey of Canada Maps 46-1962, 1712A, 1713A). Regionally, the latter is host to stratiform barite-lead-zinc mineralization, and the Kitza Creek area was examined to evaluate its potential.

The Kitza property is in the Rabbit Plateau and outcrop is limited, generally confined to incised creek valleys. However, mapping has defined a succession, over 1000 metres thick, of mainly fine-grained sedimentary rocks and minor tuffs ranging in age from possibly Upper Proterozoic to Devonian (Assessment Report 9442). The oldest rocks in the succession dominate the northern part of the property and consist of pyritic phyllite, slate and limy siltstone of Upper Proterozoic or Cambrian age. These are overlain by Lower Cambrian black mudstone, limy mudstone and minor pyritic siltstone,

CAPSULE GEOLOGY

followed by thinly bedded limy mudstone, limestone, tuff, chert and siltstone of Middle Cambrian age. Above this is the Ordovician to Lower Devonian Road River Group, composed of slaty siltstone, mudstone and calcareous mudstone, cherty mudstone, shale and sandstone. Some of the shale contains Upper Ordovician graptolites. The Silurian-Devonian part of the group is dominantly calcareous, comprising limy mudstone, limestone and calcareous sandstone. The youngest unit present is the Devonian-Mississippian Besa River Formation, composed of slaty and cherty mudstone, shale and siltstone.

The oldest, phyllite unit appears to dip steeply to the east or west. The overlying Paleozoic succession is separated by an angular unconformity and bedding within it is rather variable, the general strike being west or northwest, with moderate southerly or southwesterly dips. Northwest-striking thrust faults have been mapped locally, and probably have exerted some control on topography. This is also true for northeast-striking cross faults, as outcrops of fault breccia or solution breccia are common in valley bottoms.

No 'sedex' type mineralization has been found. Rather, one or more of tetrahedrite, sphalerite, barite, quartz, calcite and rare galena occur in veins in limestone or limy mudstone or siltstone, most commonly in the Middle Cambrian unit and to a lesser extent in the Silurian-Devonian carbonates (Assessment Report 9442). The sphalerite is honey brown. In addition, pale green fluorite was found in a few veins, and smithsonite is present in the matrix in fault breccias.

Dozens of individual showings have been mapped over the property, over a distance of about 8 kilometres and width of 3 kilometres. The occurrence has been positioned approximately in the centre of them. None of the showings are very large, and base metal grades are low. The mineralization was interpreted to be due to secondary dewatering of the sediments rather than to regional hydrothermal activity (Assessment Report 9442).

A sample of sphalerite and malachite bearing quartz veins in limestone assayed 0.42 per cent zinc and 0.12 per cent barium (Geoscience Map 1998-10).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-10
EMPR ASS RPT *9442
EMPR EXPL 1980-453; 1981-38
EMPR FIELDWORK 1996, pp. 125-144
EMPR OF 1997-14
GSC MAP 46-1962; 1712A; 1713A

DATE CODED: 1995/03/17
DATE REVISED: / /

CODED BY: CJR
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 019**

NATIONAL MINERAL INVENTORY: 94M/11 Ba 1

NAME(S): **DENIS**, FIRESIDE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094M11E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 41 59 N
LONGITUDE: 127 12 36 W
ELEVATION: 632 Metres

NORTHING: 6619329
EASTING: 600737

LOCATION ACCURACY: Within 500M

COMMENTS: Located on barite vein in Denis 13 to 16 claims, on northeast side of Alaska Highway, 3 kilometres northwest of Fireside (Assessment Report 4483, Maps 1, 2).

COMMODITIES: Barite Lead Copper

MINERALS

SIGNIFICANT: Barite Galena Chalcopyrite
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Breccia Discordant
CLASSIFICATION: Hydrothermal Industrial Min. Epigenetic
TYPE: I10 Vein barite
DIMENSION: 300 x 4 Metres STRIKE/DIP: 240/90 TREND/PLUNGE:
COMMENTS: Length and maximum thickness of barite vein, and its approximate attitude in trench number 1.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Cambrian Unnamed/Unknown Group Unnamed/Unknown Formation

LITHOLOGY: Bedded Siltstone
Breccia
Barite Vein

HOSTROCK COMMENTS: Age uncertain. Probably Cambrian but may be older.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America
COMMENTS: In poorly exposed Liard Plain.

CAPSULE GEOLOGY

The Denis barite prospect is situated immediately northeast of the Alaska Highway, 3 kilometres northwest of the settlement of Fireside. It is centred on a barite vein at the common corner of the Denis 13 to 16 claims (Assessment Report 4483, Maps 1, 2).

The area is underlain by predominantly Lower Paleozoic sedimentary rocks of Ancestral North America (Geological Survey of Canada Maps 1712A, 1713A). Relief here in the Liard Plain is generally quite low and exposure is limited, so detailed geological control is lacking. The Denis property apparently consists of Cambrian (or possibly older) black to pale brown, thinly bedded siltstones which are gently to moderately folded into west-northwest trending anticlines and synclines (Assessment Report 4483; Geological Survey of Canada Map 46-1962).

Mineralization consists of a barite vein which appears to be structurally controlled by a major anastomosing fault and breccia zone. The strike of the vein and zone varies from 240 degrees in the west to 268 degrees in the east, and it dips steeply. Bedding in the host siltstones changes from one side of the vein to the other: to the north it strikes 050 degrees and dips 80 degrees southeast, and to the south it strikes 100 degrees and dips 40 degrees south.

The vein system, designated the Number 1 vein, is 300 metres long and is exposed in a series of ten bulldozer trenches (Assessment Report 4483). The better and thicker sections are towards the west, where a zone of massive barite, 4 metres wide, is exposed in trench number 1. Scattered blebs of galena and chalcopyrite are associated. Thirty metres to the east-northeast, in trench number 2, the vein comprises four separate mineralized zones, the widest being 1.8 metres. A smaller, 0.75-metre wide barite vein is particularly pure, and is flanked by breccia containing blebs of chalcopyrite and malachite. Still farther east, the vein continues to become weaker,

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1584
REPORT: RGEN0100

CAPSULE GEOLOGY

and only narrow barite veins are present.
A lead soil anomaly is present about 300 metres northeast of the
barite vein system.

BIBLIOGRAPHY

EMPR GEM 1973-539
EMPR ASS RPT *4483
GSC MAP 2-1961; 46-1962; 1712A; 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1995/02/24

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 020**

NATIONAL MINERAL INVENTORY:

NAME(S): **RED**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M05W 094M05E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 27 58 N
LONGITUDE: 127 45 30 W
ELEVATION: 570 Metres

NORTHING: 6592612
EASTING: 570367

LOCATION ACCURACY: Within 500M

COMMENTS: Located on most westerly of three showings, in Red 1 claim on north side of Red River, 5 kilometres west of confluence with Kechika River (Assessment Report 9325, Map 1).

COMMODITIES: Lead Zinc Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Chalcopyrite Smithsonite
ASSOCIATED: Quartz Pyrite Calcite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: Metres STRIKE/DIP: 310/45 TREND/PLUNGE:
COMMENTS: General strike of bedding; dips either northeast or southwest.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Ordovician	Road River	Unnamed/Unknown Formation	
Devonian-Mississipp.	Earn	Unnamed/Unknown Formation	

LITHOLOGY: Slaty Mudstone
Carbonaceous Mudstone
Carbonaceous Shale
Siltstone
Limy Mudstone
Limy Siltstone
Sandstone
Limestone

HOSTROCK COMMENTS: Host rocks probably mainly Cambrian and Ordovician, possibly with older and younger units present.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Liard Lowland
TERRANE: Ancestral North America
COMMENTS: Immediately northeast of Northern Rocky Mountain Trench.

CAPSULE GEOLOGY

This minor lead-zinc showing is situated in the Red 1 claim, which straddles the Red River 5 kilometres west of its confluence with the Kechika River (Assessment Report 9325, Map 1).

The area is in the poorly exposed, subdued terrain of the Liard Lowland, immediately northeast of the Northern Rocky Mountain Trench. Outcrop in the property is restricted to the river valley, and consists of sedimentary rocks of probable Cambrian and Ordovician age, with possibly younger or older units, belonging to Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A).

Three informal units have been mapped (Assessment Report 9325). Unit 1, apparently at the base of the sequence, comprises orthoquartzite and sandstone with minor shale and chert. This is overlain by rusty-weathering slaty and carbonaceous mudstones, shale, siltstone and minor limestone of Unit 2. The highest unit, Unit 3, is well exposed in a syncline in the centre of the property, and consists of carbonaceous mudstone and shale, and well-bedded limy mudstone and siltstone. Mapping by the Geological Survey Branch in 1996, identified these rocks as either Ordovician to Middle Devonian Road River Group or Upper Devonian to Mississippian Earn Group (Geoscience Map 1998-10).

The strike of bedding is quite consistently around 310 degrees,

CAPSULE GEOLOGY

and dips are moderate in either direction. A number of northwest-trending anticlines and synclines with upright axial planes repeat the units across the property, with the limbs of the folds somewhat modified by steep, minor faults. Several fault breccia zones have been found, some of which are associated with mineralization.

Three outcrops of minor mineralization have been found, all on the north side of the river. The occurrence is centred on the most westerly showing, in a 3-metre long zone of breccia near the base of Unit 3. The matrix of the breccia consists of quartz with minor pyrite, galena and sphalerite. About 1 kilometre to the east is another showing, in sandstone of Unit 1. Galena and sphalerite occur in irregular, vuggy quartz veins. Roughly halfway between the two lead-zinc showings is an outcrop of Unit 2 with sparse chalcopyrite and pyrite.

All rock samples from the property yielded very low assay values. A sample of a smithsonite-bearing calcite vein assayed 3.08 per cent zinc and 4.76 per cent barium (Geoscience Map 1998-10).

BIBLIOGRAPHY

EM BULL 107
EM GEOS MAP 1998-10
EMPR ASS RPT *9325
EMPR EXPL 1980-452
EMPR FIELDWORK 1996, pp. 125-144
EMPR OF 1997-14
GSC MAP 46-1962; 1712A; 1713A

DATE CODED: 1995/03/16
DATE REVISED: 1995/03/16

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOYA MAIN FACE**, BOYA 1, PAINT CAN HILL

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094M03W 094M04E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 59 14 03 N
LONGITUDE: 127 29 11 W
ELEVATION: 900 Metres

UTM ZONE: 09 (NAD 83)

NORTHING: 6567107
EASTING: 586364

LOCATION ACCURACY: Within 500M

COMMENTS: Located in centre of Main Face showing area, in southeast corner of Boya 1 claim, 11 kilometres northeast of confluence of Turnagain and Kechika rivers (Assessment Report 7252, Figure 4S).

COMMODITIES: Tungsten Molybdenum Copper Lead Zinc
Bismuth

MINERALS

SIGNIFICANT: Molybdenite Scheelite Chalcopyrite Galena Sphalerite
Bismuthinite Arsenopyrite

COMMENTS: Last four are in trace amounts.
ASSOCIATED: Quartz Carbonate Pyrrhotite Pyrite Garnet
ALTERATION: Sericite Carbonate Chlorite Chloritic

ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Podiform Massive Stockwork
CLASSIFICATION: Skarn Porphyry Igneous-contact Hydrothermal
TYPE: L07 Porphyry W L05 Porphyry Mo (Low F- type)
K05 W skarn K07 Mo skarn

SHAPE: Irregular
DIMENSION: 600 x 300 Metres STRIKE/DIP: 290/90 TREND/PLUNGE:
COMMENTS: Approximate surface area of Main Face. General orientation of quartz veins.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Paleozoic Unnamed/Unknown Group Unnamed/Unknown Formation Unnamed/Unknown Informal
Unknown

LITHOLOGY: Quartz Diopside Calc-silicate
Garnetiferous Skarn
Quartz Biotite Feldspar Porphyry
Aplitic Porphyry
Hornfels
Massive Limestone
Marble
Shale
Siltstone
Andesitic Volcanic

HOSTROCK COMMENTS: Stratified rocks are Cambrian and Ordovician, and possibly Upper Proterozoic. Age of intrusives unknown, possibly Mesozoic.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Rabbit Plateau

TERRANE: Ancestral North America

METAMORPHIC TYPE: Contact RELATIONSHIP: Syn-mineralization GRADE: Hornfels

COMMENTS: Just northeast of the Northern Rocky Mountain Trench.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1978
SAMPLE TYPE: Grab
COMMODITY GRADE
Copper 0.1100 Per cent
Tungsten 0.1500 Per cent

COMMENTS: Actually WO3 rather than tungsten. Select grab sample.
REFERENCE: Assessment Report 7915, page 11.

CAPSULE GEOLOGY

The Boya Main Face prospect is primarily a tungsten-molybdenum

CAPSULE GEOLOGY

porphyry-skarn deposit, situated in the southeast corner of the Boya 1 claim, on the east flank of a triangular hill, 11 kilometres northeast of the confluence of the Turnagain and Kechika rivers (Assessment Report 7252, Figure 4S).

The Boya claims are located over a patchily mineralized area of several square kilometres, exposed on the hill which rises above generally subdued terrain of the Rabbit Plateau. The area is just northeast of the Northern Rocky Mountain Trench, and the hill is underlain by Cambrian and Ordovician rocks, and possibly some Upper Proterozoic rocks, belonging to Ancestral North America (Geological Survey of Canada Maps 46-1962, 1712A, 1713A).

The geology is complicated in detail. Essentially, it consists of siliciclastic, carbonate and volcanic rocks which have been intruded, metamorphosed and skarnified by quartz-rich porphyritic intrusions of possible Mesozoic age. As well as tungsten skarns, mineralization consists of quartz-vein stockworks carrying molybdenite and scheelite.

There are several showings in the area. Two MINFILE occurrences have been assigned to cover the most important of them: this occurrence deals with the Main Face showing; another occurrence, the Boya West Hill (094M 016), deals with the West Hill showing 3.5 kilometres to the northwest. A smaller showing, on "Paint Can Hill", occurs about halfway between them and is described briefly here, at the end.

The Main Face area measures roughly 600 by 300 metres, and consists of a sequence, at least 490 metres thick, of quartzite, calcareous shale, siliceous shale, siltstone, sandstone, and massive limestone and marble (Assessment Report 7252). Included in the upper portion is a 40-metre thick volcanic subunit, comprising amygdaloidal andesitic flows, volcanic breccia and thinly bedded tuffaceous rocks. Bedding generally strikes 010 degrees and dips between 20 and 60 degrees west. Folding is not as evident as elsewhere on the property. These stratified rocks are intruded by dykes, sills and small stocks of medium-grained quartz-biotite-feldspar porphyry. The aphanitic groundmass in these rocks contains abundant potassium feldspar, where unaltered. Most porphyries are composed of quartz monzonite or granodiorite, whereas more leucocratic varieties are aplitic and only weakly porphyritic (Assessment Report 7252).

A thermal aureole is present in the stratified rocks around the intrusions, which is marked by contact metamorphism, hornfelsing and recrystallization, hydrothermal alteration, and mineralization. One of the most common products is a finely banded quartz-diopside calc-silicate rock known in the area as "porcellanite", probably derived from limy shale or siltstone (Assessment Report 7252; Fieldwork 1979). Several outcrops of this rock contain layers of pyrrhotite-chalcopyrite-scheelite mineralization, a select grab sample of which assayed 0.11 per cent copper and 0.15 per cent W₃ (Assessment Report 7915, page 11). This mineralization also occurs in a volcanic layer elsewhere (Assessment Report 7252, Figure 6). Locally, coarse-grained garnetiferous skarn in limestone or marble units carries disseminated or semi-massive pyrrhotite and lesser chalcopyrite, molybdenite and scheelite. Molybdenite occurs locally in the porphyry.

Hydrothermal alteration is widespread, in the form of progressive chloritic and carbonate-sericite alteration. It is strongest in the intrusions but also affects the metasediments, particularly where they are fractured.

Quartz stockworks and veins are common at the Main Face, both in the porphyry intrusions and the altered metasediments, and they host probably the most significant mineralization, namely molybdenite. This occurs notably in two places, mainly in the porphyry but extending into the surrounding porcellanite and other metasediments. Molybdenite occurs as continuous thin streaks in 'ribbon veins' or as fine selvages in veinlets. The strongest molybdenite is generally accompanied by a smaller amount of scheelite. Coarse rosettes of molybdenite do not occur. The quartz or quartz-carbonate veins are typically 2 centimetres thick, but may be much thicker, and strike west-northwest and dip vertically. In some places there are 'swarms' of quartz veins, constituting up to 50 per cent of the rock volume. More 'delicate' quartz stockworks host fine-grained scheelite and molybdenite. Sampling of this material suggests that the tungsten content is erratic and probably does not exceed 0.1 per cent W₃ over appreciable widths.

Diamond drilling was done to test the extent and grade of this mineralization and porphyry alteration (Assessment Reports 8008, 8024, 9299, 9532). Samples of drill core yielded low assay values, no more than 0.2 per cent MoS₂ and 0.55 per cent W₃ (Assessment Report 8008); most are considerably less.

CAPSULE GEOLOGY

Other quartz veins at the Main Face may contain abundant pyrite, minor molybdenite, scheelite and chalcopyrite, and traces of galena, sphalerite, bismuthinite, chalcopyrite, and arsenopyrite (Assessment Report 7252, Fieldwork 1979).

Paint Can Hill, 2 kilometres northwest of the Main Face, is a small area of massive limestone and marble, with bands of coarse-grained garnetiferous skarn (Assessment Report 7252, Figure 4N). There is at least one quartz-feldspar porphyry dyke exposed. The marble contains a zone 10 metres by 30 centimetres with semi-massive mineralization consisting of arsenopyrite, pyrite, sphalerite, chalcopyrite and traces of scheelite. Diamond drilling indicated only very weak mineralization in this area (Assessment Report 9532).

BIBLIOGRAPHY

EM BULL 107, pp. 107-110
EM GEOS MAP 1998-10
EMPR ASS RPT *7252, 7419, 7431, 7915, *8008, 8024, 8081, 9299, 9532
EMPR EXPL 1978-E254, 255; 1979-271, 272; 1980-451, 452; 1981-56
EMPR FIELDWORK 1979, p. 126; 1996, pp. 125-144
EMPR OF 1997-14
GSC MAP 46-1962; 1712A; 1713A
Falconbridge File (Several 1978, 1979 Reports by G.R. Peatfield)

DATE CODED: 1985/07/24
DATE REVISED: 1995/03/15

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 022**

NATIONAL MINERAL INVENTORY:

NAME(S): **LIARD HOTSPRINGS**, TROPICAL VALLEY

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M08E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 25 43 N
LONGITUDE: 126 06 10 W
ELEVATION: 475 Metres

NORTHING: 6591358
EASTING: 664345

LOCATION ACCURACY: Within 500M

COMMENTS: Located in centre of hotspots area, in Liard River Hotspots
Provincial Park, at settlement of Liard River on Alaska Highway.

COMMODITIES: Radioactive Material Radon Hotspot

MINERALS

SIGNIFICANT: Unknown
COMMENTS: Radioactivity may be due to radon gas or radium-bearing minerals.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Evaporite Industrial Min.
TYPE: H01 Travertine T02 Geothermal spring
COMMENTS: Surficial deposit.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Quaternary Undefined Group Undefined Formation

LITHOLOGY: Tufa

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America

CAPSULE GEOLOGY

This occurrence of radioactive tufa is situated in Liard River Hotspots Provincial Park, at the settlement of Liard River on the Alaska Highway.

Radioactivity is present in the water and calcareous tufa deposits at the hotspots. Material from the deposit was tested by X-ray fluorescence, and apparently contains little or no uranium or thorium (Geological Survey of Canada Economic Geology Report Number 16). The radioactivity was attributed to radon gas and possibly radium salts derived from unknown bedrock sources. The temperature of the water in the hottest pool at the springs is up to 50 degrees centigrade (Geological Survey of Canada Paper 72-32).

The area is underlain by Upper Devonian to Mississippian shale, argillite, siltstone, sandstone and minor limestone of the Besa River Formation (Geological Survey of Canada Maps 46-1962, 1712A, 1713A).

BIBLIOGRAPHY

EMPR MAP 22-61
GSC OF 551
GSC P 44-28, p. 8, 31; 72-32, p. 19
GSC MAP 46-1962; 1712A; 1713A
GSC EC GEOL *No. 16 (Rev.), pp. 67, 234

DATE CODED: 1987/08/21
DATE REVISED: 1995/03/08

CODED BY: LDJ
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094M 023**

NATIONAL MINERAL INVENTORY:

NAME(S): **KECHIKA RIVER BARITE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094M05E
BC MAP:

UTM ZONE: 09 (NAD 83)

LATITUDE: 59 24 04 N
LONGITUDE: 127 37 23 W
ELEVATION: 650 Metres

NORTHING: 6585526
EASTING: 578183

LOCATION ACCURACY: Within 500M

COMMENTS: Sample location Geoscience Map 1998-10, east of Kechika River.

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite

ASSOCIATED: Pyrite

MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratiform Stratabound Disseminated
CLASSIFICATION: Sedimentary
TYPE: E17 Sediment-hosted barite
COMMENTS: Bedded barite.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Devonian-Mississipp.	Earn	Undefined Formation	

LITHOLOGY: Slate
Barite

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Northeast of Northern Rocky Mountain Trench.

PHYSIOGRAPHIC AREA: Liard Lowland

CAPSULE GEOLOGY

Kechika River Barite is a thin to moderately interlayered or massive barite, within pyritiferous slate of the Upper Devonian to Mississippian Earn Group. A sample of the barite assayed 42.48 per cent barium (Geoscience Map 1998-10).

The barite sequence is at least 4 metres thick, composed of individual barite beds from 1 to 10 centimetres, and forming about 30 per cent of the section. The host is fine grained altered slate or fine grained felsic tuff (Bulletin 107, page 104).

BIBLIOGRAPHY

EM BULL 107, pp. 104-105
EM GEOS MAP 1998-10
EMPR FIELDWORK 1996, pp. 125-144
EMPR OF 1997-14
GSC MAP 46-1962; 1712A; 1713A
EMPR OF 2000-22

DATE CODED: 1998/12/21
DATE REVISED: 2003/02/10

CODED BY: FF
REVISED BY: MPS

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **094N 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **WISHING WELL**, DEER RIVER SPRINGS

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094N12W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 31 40 N
LONGITUDE: 125 57 15 W
ELEVATION: 762 Metres

NORTHING: 6602536
EASTING: 332917

LOCATION ACCURACY: Within 500M

COMMENTS: Located in the approximate centre of a small group of claims on the east side of Deer River, 12 kilometres north of the Liard River, 25 kilometres north-northwest of Mount Prudence (Property File - H., S., 1964).

COMMODITIES: Radioactive Material Radium Uranium Radon Hotspring

MINERALS

SIGNIFICANT: Unknown
MINERALIZATION AGE: Quaternary

DEPOSIT

CHARACTER: Unconsolidated
CLASSIFICATION: Evaporite Epithermal Industrial Min. B08 Surficial U
TYPE: H01 Travertine
COMMENTS: Surficial deposit.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE GROUP FORMATION IGNEOUS/METAMORPHIC/OTHER
Quaternary Undefined Group Unnamed/Unknown Formation

LITHOLOGY: Calcareous Tufa

HOSTROCK COMMENTS: Surficial material, deposited around cool springs. Bedrock is Upper Devonian Besa River Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hyland Highland
TERRANE: Ancestral North America

CAPSULE GEOLOGY

The Wishing Well occurrence consists of radioactive tufa associated with cool springs. It is located in the middle of a small group of claims, staked probably around 1954, on the east side of Deer River, 12 kilometres north of the Liard River, 25 kilometres north-northwest of Mount Prudence (Property File - H., S., 1964).

The area is underlain by shale, siltstone and sandstone of the Upper Devonian Besa River Formation, belonging to Ancestral North America (Geological Survey of Canada Open File 673 and Map 1713A).

Quaternary deposits of calcareous tufa have formed around cool springs. The water in the springs is slightly radioactive, possibly from dissolved radon gas, or from minute amounts of radium. At least some of the tufa is also mildly radioactive, possibly due to the deposition of uranium or radium salts (Property File - H., S., 1964). Analyses of similar radioactive tufa from hot springs in the Liard region actually indicate that no uranium or thorium is present, suggesting that the radioactivity is most likely due to small amounts of radium, derived from bedrock (Geological Survey of Canada Economic Geology Report Number 16).

BIBLIOGRAPHY

EMPR MAP *22-62
EMPR OF 1990-32
EMPR PF (H., S. (1964): Notes)
GSC OF 673
GSC MAP 1713A
GSC EC GEOL *No. 16 (Rev.), p. 67

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/19

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 002**

NATIONAL MINERAL INVENTORY: 94N/4 Ba 1

NAME(S): **BV**, MUNCHO LAKE BARITE, A.V,
BV 9, SULPHUR CREEK

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094N04E
BC MAP:

MINING DIVISION: Liard

LATITUDE: 59 04 04 N
LONGITUDE: 125 41 31 W
ELEVATION: 1410 Metres

UTM ZONE: 10 (NAD 83)

NORTHING: 6550710
EASTING: 345672

LOCATION ACCURACY: Within 500M

COMMENTS: Located near northeastern corner of BV 9 claim, at approximate centre of deposit, 6 kilometres east-northeast of northern end of Muncho Lake and the Alaska Highway (Assessment Report 3078, Map 3).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
COMMENTS: Mostly white, coarse grained.
ASSOCIATED: Calcite
COMMENTS: Minor constituent.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Massive Vein
CLASSIFICATION: Replacement Hydrothermal Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Tabular
DIMENSION: 4000 x 32 Metres STRIKE/DIP: 360/30W TREND/PLUNGE:
COMMENTS: Barite forms lensoidal body with a strike length of 4000 metres and maximum thickness of 32 metres. Lens strikes roughly north and dips north and dips 20 to 30 degrees west, concordant with host strata.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Stone	

LITHOLOGY: Barite
Fine Grained Dolomite
Dolomitic Breccia

HOSTROCK COMMENTS: Deposit occurs at the base of the Stone Formation, immediately above the Wokkash Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: LENS REPORT ON: Y
CATEGORY: Inferred YEAR: 1967
QUANTITY: 100000000 Tonnes
COMMODITY GRADE
Barite 65.0000 Per cent
COMMENTS: Inferred resource ('tonnage') for entire deposit.
REFERENCE: Assessment Report 1682, pages 22-23.

ORE ZONE: LENS REPORT ON: Y
CATEGORY: Indicated YEAR: 1972
QUANTITY: 3500000 Tonnes
COMMODITY GRADE
Barite 65.0000 Per cent
COMMENTS: Indicated 'resource' over a down-dip distance of 180 metres. Grade is not given, so assumed to be same as inferred resource.
REFERENCE: Assessment Report 3078, Table 1.

CAPSULE GEOLOGY

The BV prospect is a large, high grade stratiform barite deposit in the Sentinel Range of the Northern Rocky Mountains, 6 kilometres east-northeast of the northern end of Muncho Lake, which is on the Alaska Highway. The deposit was first mapped and sampled by Delta

CAPSULE GEOLOGY

Explorations Limited in 1967. Teslin Exploration Limited conducted detailed engineering and economic studies in 1970.

The region is underlain by Proterozoic to Middle Devonian sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Open File 673, Map 1713A). The BV claims are underlain mainly by the Devonian Wokkpash, Stone and Dunedin formations. The rocks are designated differently in Assessment Report 1682.

The Lower Devonian Wokkpash Formation (mostly equivalent to the Yellow unit in Assessment Report 1682) is composed of yellow-weathering, fine-grained dolostone and limestone, dolomitic quartz sandstone and siltstone, and minor solution breccia. The uppermost part is distinctly red-weathering. The overlying Middle Devonian Stone Formation (equivalent to the Arnica Formation in Assessment Report 1682) is pale grey-weathering, very fine-grained dolostone and dolostone breccia. It is about 640 metres thick in the region. This unit is overlain by the Middle Devonian Dunedin Formation (probably equivalent to the Nahanni Formation in Assessment Report 1682), comprising well-bedded fossiliferous limestone.

A few broad folds and gently west-dipping thrusts characterize the structure of the area (Assessment Report 1682). The area around the BV occurrence is dominated by two north-northwest striking thrusts. The McMechan Creek thrust carries a panel of mainly Wokkpash and Stone formation rocks. The footwall comprises the same units. Two kilometres to the east, these rocks are emplaced on the Dunedin Formation by the Barite Creek thrust. Bedding varies but generally strikes north, with gentle to moderate westerly dips.

The barite deposit is well-defined stratigraphically. Applying the stratigraphic terminology given above to the available information, bedded, stratiform barite apparently occurs at the base of the Stone Formation, immediately above the Wokkpash Formation. The deposit has a lensoidal, plano-convex shape, dipping about 30 degrees west, with a flat base and a convex upper surface. The deposit is well exposed on a southeast-facing slope, the largest mappable dimension, along the strike, being about 4000 metres. The barite beds, up to 4.75 metres thick, are separated by beds of grey dolostone which locally contain blebs of barite. Overall, the deposit is about 32 metres thick in the centre of the lens, about 60 per cent of which is high grade barite. The barite is most commonly massive, white and coarse grained. Some layers consist of fibrous barite which grew as an array into open space on corroded dolostone (National Mineral Inventory). Very coarse-grained calcite is associated with barite in the interstices of solution breccias.

The barite was considered to be formed by a secondary replacement of the host rocks, primarily because of sharp lateral changes from grey dolostone to massive white barite (Assessment Report 1682). Other, minor forms of barite, namely as a cement in dolostone breccia and as veins in dolostone, also indicate a secondary origin.

Barite deposits are present in both the McMechan Creek and Barite Creek thrust sheets. Claims BV 14 and 15 are in the former; claims BV 1 to 13 are in the latter. It is speculated that the deposit was originally continuous before being offset by the McMechan Creek thrust (Assessment Report 1682).

The barite content of the deposit has been evaluated in part of claim BV 9. Results showed that one zone assayed 80 per cent barite (BaSO₄) over 3 metres, and another, 18-metre wide zone averaged 65 per cent BaSO₄ (Assessment Report 1682). Based on these results, and assumptions regarding the shape of the deposit and minimum mining width, an inferred "tonnage" or resource of 100 million tonnes was derived, with an indicated grade of 65 per cent BaSO₄ (Assessment Report 1682, pages 22, 23). A more detailed mining feasibility study was done in 1970 (Assessment Report 3078).

BIBLIOGRAPHY

EMPR ASS RPT *1682, 3078
EMPR OF 1997-16
GSC BULL 186
GSC MAP 1713A
GSC OF 673

DATE CODED: 1985/07/24
DATE REVISED: 1995/01/24

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 003**

NATIONAL MINERAL INVENTORY: 94N/4 Fsp 1

NAME(S): **SNOW**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094N04E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 04 33 N
LONGITUDE: 125 39 32 W
ELEVATION: 1100 Metres

NORTHING: 6551530
EASTING: 347603

LOCATION ACCURACY: Within 500M

COMMENTS: Located in centre of main band of fluorite mineralization, on south side of tributary of Sulphur Creek, 8 kilometres east-northeast of the Alaska Highway at the northern end of Muncho Lake (Assessment Report 3965, Map 2).

COMMODITIES: Fluorite

MINERALS

SIGNIFICANT: Fluorite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Concordant Vein
CLASSIFICATION: Replacement Hydrothermal Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar
SHAPE: Tabular
DIMENSION: 90 x 38 Metres STRIKE/DIP: 360/30W TREND/PLUNGE:
COMMENTS: Exposed length and maximum thickness of larger deposit. Down dip extent not known but shape assumed to be tabular. Average attitude.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Fine Grained Bedded Limestone

HOSTROCK COMMENTS: Regional geology map suggests host rock is Stone Formation, but detailed information indicates it is Dunedin Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Grab
COMMODITY GRADE
Fluorite 36.4500 Per cent
COMMENTS: Maximum value from range of individual samples.
REFERENCE: Assessment Report 3965.

ORE ZONE: SNOW REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Grab
COMMODITY GRADE
Fluorite 17.9000 Per cent
COMMENTS: Average grade of 20 samples taken over 53 metres.
REFERENCE: Assessment Report 3965.

CAPSULE GEOLOGY

The Snow showing is a small fluorite deposit, situated on the south side of a tributary of Sulphur Creek in the Northern Rocky Mountains, 8 kilometres east-northeast of the northern end of Muncho Lake, which is on the Alaska Highway (Assessment Report 3965, Map 2). The region is underlain by Proterozoic to Carboniferous sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Open File 673, Map 1713A). The rocks are deformed by northeast-verging thrusts and folded into northwesterly-trending anticlines and synclines. The Snow claims are underlain by the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Open File 673).

CAPSULE GEOLOGY

These rocks form part of a thrust sheet overlying shale of the Upper Devonian to Mississippian Besa River Formation. The Stone Formation consists of pale grey, very fine grained dolostone and dolomitic sandstone. The Dunedin Formation mainly comprises grey, well-bedded, very fine grained limestone. It varies from pale grey to almost black, and from thinly bedded to massive.

Fluorite mineralization is exposed in steep cliffs in two areas in Snow 5 claim, overlapping into Snow 6, apparently in Dunedin Formation limestone (Assessment Report 3965). The larger and richer deposit forms an arcuate band with an exposed length of 90 metres and a maximum vertical thickness of 38 metres. It appears to be concordant with the host strata, which strike north and dip west about 25 degrees. The fluorite occurs sporadically as a fracture filling and replacement in strongly fractured limestone. Samples range from 0.96 to 36.45 per cent fluorite (CaF₂) (Assessment Report 3965). The average grade of 20 samples taken over 53 metres is 17.9 per cent fluorite. Diamond drilling, located on the adjacent overburden, would be required to determine the lateral extension and the tonnage potential of the zone (Assessment Report 3965).

The smaller deposit is exposed for 60 metres on the cliff to the west, with a thickness of 3.65 metres. It is also concordant, striking north and dipping west at 48 degrees. The best sample assayed 17.01 per cent fluorite (Assessment Report 3965).

Fluorite mineralization extends to within at least 3 metres of the thrust contact with the Besa River Formation, suggesting that the mineralization may be structurally controlled (Assessment Report 3965).

BIBLIOGRAPHY

EMPR ASS RPT *3965
EMPR GEM 1971-462; 1972-595
EMPR OF 1992-16, p. 77
GSC BULL 186
GSC OF 673
GSC MAP 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/19

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 004**

NATIONAL MINERAL INVENTORY: 94N/13 Fsp 1

NAME(S): **DAN 32**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094N12E 094N11W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 43 24 N
LONGITUDE: 125 30 42 W
ELEVATION: 1400 Metres

NORTHING: 6623274
EASTING: 358759

LOCATION ACCURACY: Within 500M

COMMENTS: Located in centre of the Dan 32 claim, in the Caribou Range, 14 kilometres north of Grayling River, 88 kilometres west-northwest of Nelson Forks (Assessment Report 4205).

COMMODITIES: Fluorite

MINERALS

SIGNIFICANT: Fluorite
COMMENTS: Fluorite is purple.
ASSOCIATED: Barite Witherite Calcite Quartz
COMMENTS: Barite is very minor. Quartz is inferred from whole rock assay.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Massive Disseminated
CLASSIFICATION: Replacement Hydrothermal Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar
SHAPE: Bladed
DIMENSION: 45 x 12 x 2 Metres STRIKE/DIP:
COMMENTS: Mineralized zone is generally concordant with host strata, striking north and dipping moderately east.

TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Bedded Cherty Limestone
Bedded Argillaceous Limestone

HOSTROCK COMMENTS: Mineralization generally restricted to upper 30 metres of Dunedin Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Liard Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1972

SAMPLE TYPE: Grab

<u>COMMODITY</u>	<u>GRADE</u>
Fluorite	53.4000 Per cent

COMMENTS: Composite of this and samples from two other, similar MINFILE occurrences in the area (094N 005 and 094N 007).

REFERENCE: Assessment Report 4205.

CAPSULE GEOLOGY

The Dan 32 fluorite prospect is situated in the Caribou Range in the Northern Rocky Mountains, 14 kilometres north of Grayling River, 88 kilometres west-northwest of Nelson Forks. It was explored by Frontier Resources Incorporated and Pan Ocean Oil Limited in 1972.

The Caribou Range is underlain by folded, mainly Devonian and Mississippian sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Map 1713A). The Dan Group of claims covers an east-dipping panel comprising the Middle Devonian Stone and Dunedin Formations, and the Upper Devonian to Mississippian Besa River Formation (Geological Survey of Canada Open File 673). A number of fluorite-barite showings of the vein or bedded replacement type occur in the claim group, all within the Dunedin Formation in a north-trending linear belt with a strike length of 8 kilometres. The northern half of this belt has been called the "Northern" trend, and the southern half the "Southern" trend (Assessment Report 4205). The Dan 32 prospect is at the southern end of the Northern trend. Other

CAPSULE GEOLOGY

showings in this belt are covered by MINFILE occurrences 094N 005, 094N 006 and 094N 007.

The Dunedin Formation consists of bedded, dark grey, fetid, argillaceous or siliceous (silty or cherty) limestone, and is about 260 metres thick (Assessment Report 4205). The uppermost 30 metres of the formation consists of dark grey limestone with numerous lenses and nodules of black chert. Like most of the other occurrences in the belt, the Dan 32 is in a 23-metre thick interval near the base of this upper, chert-rich subunit of the formation. In this locality, the mineralization consists of disseminated purple fluorite and barite, associated with witherite and calcite, in the form of a bedded replacement of the host limestone. The grain size of the mineralization is highly variable, but is mostly fine grained. The beds range in thickness from a few centimetres to 1.5 metres and occur in a zone with an exposed strike length of 45 metres, width of 12 metres, and thickness of 2.5 metres (Assessment Report 4205).

An assay was made of a composite sample from the Dan 32 and two other, similar bedded replacement occurrences in the belt: the Dan 6 (094N 005) and the Dan 48 (094N 007). The result was 53.4% fluorite (CaF₂; by weight), 41.1% quartz, and 4.1% witherite (BaCO₃), for a total of 98.6% (Assessment Report 4205).

BIBLIOGRAPHY

EMPR GEM 1972-596
EMPR ASS RPT *4205
EMPR OF 1992-16, p. 77
GSC BULL 186
GSC OF 673
GSC MAP 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/19

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 005**

NATIONAL MINERAL INVENTORY: 94N/13 Fsp 1

NAME(S): **DAN 6**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094N12E 094N11W
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 44 04 N
LONGITUDE: 125 30 31 W
ELEVATION: 1475 Metres

NORTHING: 6624505
EASTING: 358978

LOCATION ACCURACY: Within 500M

COMMENTS: Located near northwest corner of Dan 6 claim, in the Caribou Range, 13 kilometres north of Grayling River, 88 kilometres west-northwest of Nelson Forks (Assessment Report 4205).

COMMODITIES: Fluorite Barite

MINERALS

SIGNIFICANT: Fluorite
COMMENTS: Fluorite is purple.
ASSOCIATED: Barite Witherite Calcite Quartz
COMMENTS: Barite is very minor. Quartz is inferred from whole rock assay.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Disseminated Massive
CLASSIFICATION: Replacement Hydrothermal Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar
SHAPE: Tabular
DIMENSION: 38 x 30 x 10 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Width, length and thickness of mineralized zone, which is approximately concordant with host strata, striking north and dipping moderately east.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Bedded Cherty Limestone
Bedded Argillaceous Limestone

HOSTROCK COMMENTS: Mineralization generally restricted to upper 30 metres of Dunedin Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Liard Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1972
SAMPLE TYPE: Grab
COMMODITY Fluorite GRADE 53.4000 Per cent
COMMENTS: Composite of this and samples from two other, similar MINFILE occurrences in the area (094N 004 and 094N 007).
REFERENCE: Assessment Report 4205.

CAPSULE GEOLOGY

The Dan 6 fluorite prospect is situated in the Caribou Range in the Northern Rocky Mountains, 13 kilometres north of Grayling River, 88 kilometres west-northwest of Nelson Forks. It was explored by Frontier Resources Incorporated and Pan Ocean Oil Limited in 1972.

The Caribou Range is underlain by folded, mainly Devonian and Mississippian sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Map 1713A). The Dan Group of claims covers an east-dipping panel comprising the Middle Devonian Stone and Dunedin Formations, and the Upper Devonian to Mississippian Besa River Formation (Geological Survey of Canada Open File 673). A number of fluorite-barite showings of the vein and bedded replacement type occur in the claim group, all within the Dunedin Formation in a north-trending linear belt with a strike length of 8 kilometres. The northern half of this belt has been called the "Northern" trend, and the southern half the "Southern" trend (Assessment Report 4205). The

CAPSULE GEOLOGY

Dan 6 prospect is in the middle of the Northern trend. Other showings in this belt are covered by MINFILE occurrences 094N 004, 094N 006 and 094N 007.

The Dunedin Formation consists of bedded, dark grey, fetid, argillaceous or siliceous (silty or cherty) limestone, and is about 260 metres thick (Assessment Report 4205). The uppermost 30 metres of the formation consists of dark grey limestone with numerous lenses and nodules of black chert. Like most of the other occurrences in the belt, the Dan 6 is in a 23-metre thick interval near the base of this upper, chert-rich subunit of the formation. In this locality, the mineralization is in the form of a bedded replacement of the host limestone. Half consists of fine grained disseminated purple fluorite and the other half consists of coarse grained bands. Associated minerals are barite, witherite and calcite. The mineralization occurs in a zone 30 metres long, 38 metres wide and 10 metres thick (Assessment Report 4205).

An assay was made of a composite sample from the Dan 6 and two other, similar bedded replacement occurrences in the belt: the Dan 32 (094N 004) and the Dan 48 (094N 007). The result was 53.4% fluorite (CaF₂; by weight), 41.1% quartz, and 4.1% witherite (BaCO₃), for a total of 98.6% (Assessment Report 4205).

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EMPR GEM 1972-596
EMPR ASS RPT *4205
EMPR OF 1992-16, p. 77
GSC BULL 186
GSC OF 673
GSC MAP 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/20

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 006**

NATIONAL MINERAL INVENTORY: 94N/13 Fsp 1

NAME(S): **DAN 39**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094N12E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 42 18 N
LONGITUDE: 125 31 55 W
ELEVATION: 1500 Metres

NORTHING: 6621277
EASTING: 357541

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Dan 39 claim, in the Caribou Range, 10 kilometres north of Grayling River, 88 kilometres west-northwest of Nelson Forks (Assessment Report 4205).

COMMODITIES: Fluorite

MINERALS

SIGNIFICANT: Fluorite
ASSOCIATED: Barite Witherite Calcite
COMMENTS: Probably associated but not specified.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Industrial Min.
TYPE: E11 Carbonate-hosted flourspar
SHAPE: Tabular
DIMENSION: 30 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Maximum strike length and thickness of veins. Shape assumed to be tabular.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Bedded Cherty Limestone
Bedded Argillaceous Limestone

HOSTROCK COMMENTS: Mineralization generally restricted to upper 30 metres of Dunedin Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Liard Ranges

CAPSULE GEOLOGY

The Dan 39 fluorite showing is situated in the Caribou Range in the Northern Rocky Mountains, 10 kilometres north of Grayling River, 88 kilometres west-northwest of Nelson Forks. It was explored by Frontier Resources Incorporated and Pan Ocean Oil Limited in 1972.

The Caribou Range is underlain by folded, mainly Devonian and Mississippian sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Map 1713A). The Dan Group of claims covers an east-dipping panel comprising the Middle Devonian Stone and Dunedin Formations, and the Upper Devonian to Mississippian Besa River Formation (Geological Survey of Canada Open File 673). A number of fluorite-barite showings of the vein and bedded replacement type occur in the claim group, all within the Dunedin Formation, in a north-trending linear belt with a strike length of 8 kilometres. The northern half of this belt has been called the "Northern" trend, and the southern half the "Southern" trend (Assessment Report 4205). The Dan 39 prospect is at the north end of the Southern trend. Other showings in this belt are covered by MINFILE occurrences 094N 004, 094N 005 and 094N 007.

The Dunedin Formation consists of bedded, dark grey, fetid, argillaceous or siliceous (silty or cherty) limestone, and is about 260 metres thick (Assessment Report 4205). The uppermost 30 metres of the formation consists of dark grey limestone with numerous lenses and nodules of black chert. Like most of the other occurrences in the belt, the Dan 39 is in a 23-metre thick interval near the base of this upper, chert-rich subunit of the formation. In this locality, the mineralization forms veins of fluorite, possibly associated with barite, witherite and calcite (Assessment Report 4205). The veins are approximately 8 to 90 centimetres thick, and are poorly exposed for roughly 7 to 30 metres along their strike.

RUN DATE: 26-Jun-2003
RUN TIME: 11:51:27

MINFILE MASTER REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 1602
REPORT: RGEN0100

BIBLIOGRAPHY

EMPR GEM 1972-596
EMPR ASS RPT *4205
EMPR OF 1992-16, p. 77
GSC BULL 186
GSC OF 673
GSC MAP 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/20

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 007**

NATIONAL MINERAL INVENTORY: 94N/13 Fsp 1

NAME(S): **DAN 48**

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094N12E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 41 22 N
LONGITUDE: 125 32 16 W
ELEVATION: 1430 Metres

NORTHING: 6619558
EASTING: 357147

LOCATION ACCURACY: Within 500M

COMMENTS: Located near northwest corner of Dan 48 claim in the Caribou Range, 8 kilometres north of Grayling River, 88 kilometres west-northwest of Nelson Forks (Assessment Report 4205).

COMMODITIES: Fluorite

MINERALS

SIGNIFICANT: Fluorite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratiform Disseminated
CLASSIFICATION: Replacement Hydrothermal Industrial Min.
TYPE: E11 Carbonate-hosted fluorspar

SHAPE: Bladed

DIMENSION: 15 x 6 x 3 Metres

STRIKE/DIP:

TREND/PLUNGE:

COMMENTS: Dimensions of exposed mineralized zone. Assumed to be concordant with host strata, which strike north and dip moderately east.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE

Middle Devonian

GROUP

Undefined Group

FORMATION

Dunedin

IGNEOUS/METAMORPHIC/OTHER

LITHOLOGY: Bedded Sandy Limestone
Bedded Cherty Limestone

HOSTROCK COMMENTS: Mineralization generally restricted to upper 30 metres of Dunedin Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Liard Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis

YEAR: 1972

SAMPLE TYPE: Grab

COMMODITY

GRADE

Fluorite

53.4000

Per cent

COMMENTS: Composite of this and samples of two other, similar MINFILE occurrences in the area (094N 004 and 094N 005).

REFERENCE: Assessment Report 4205.

CAPSULE GEOLOGY

The Dan 48 fluorite prospect is situated in the Caribou Range in the Northern Rocky Mountains, 8 kilometres north of Grayling River, 88 kilometres west-northwest of Nelson Forks. It was explored by Frontier Resources Incorporated and Pan Ocean Oil Limited in 1972.

The Caribou Range is underlain by folded, mainly Devonian and Mississippian sedimentary rocks belonging to Ancestral North America (Geological Survey of Canada Map 1713A). The Dan Group of claims covers an east-dipping panel comprising the Middle Devonian Stone and Dunedin Formations, and the Upper Devonian to Mississippian Besa River Formation (Geological Survey of Canada Open File 673). A number of fluorite-barite showings of the vein or bedded replacement type occur in the claim group, all within the Dunedin Formation in a north-trending linear belt with a strike length of 8 kilometres. The northern half of this belt has been called the "Northern" trend, and the southern half the "Southern" trend (Assessment Report 4205). The Dan 48 prospect is near the centre of the Southern trend. Other showings in this belt are covered by MINFILE occurrences 094N 004, 094N 005 and 094N 006.

The Dunedin Formation consists of bedded, dark grey, fetid,

CAPSULE GEOLOGY

argillaceous or siliceous (silty or cherty) limestone, and is about 260 metres thick (Assessment Report 4205). The uppermost 30 metres of the formation consists of dark grey limestone with numerous lenses and nodules of black chert. Like most of the other occurrences in the belt, the Dan 48 is in a 23-metre thick interval near the base of this upper, chert-rich subunit of the formation. In this locality, the mineralization consists of fine-grained disseminated fluorite forming a bedded replacement in pitted, sandy limestone (Assessment Report 4205). The limestone is cut by thin feeder fractures. The exposed mineralized zone is 15 metres long, 6 metres wide and 2 to 3 metres thick (Assessment Report 4205).

An assay was made of a composite sample from the Dan 48 and two other, similar bedded replacement occurrences in the belt: the Dan 32 (094N 004) and the Dan 6 (094N 005). The result was 53.4% fluorite (CaF₂; by weight), 41.1% quartz, and 4.1% witherite (BaCO₃), for a total of 98.6% (Assessment Report 4205).

BIBLIOGRAPHY

EMPR GEM 1972-596
EMPR ASS RPT *4205
EMPR OF 1992-16, p. 77
GSC BULL 186
GSC OF 673
GSC MAP 1713A

DATE CODED: 1985/07/24
DATE REVISED: 1994/10/20

CODED BY: GSB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **MO**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 094N04E
BC MAP:

MINING DIVISION: Liard

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 05 56 N
LONGITUDE: 125 41 15 W
ELEVATION: 1380 Metres

NORTHING: 6554162
EASTING: 346067

LOCATION ACCURACY: Within 500M

COMMENTS: Located on Mo 1 sample section in centre of mineralized zone, on a small tributary of Sulphur Creek in the Sentinel Range, 8.5 northeast of the northern end of Muncho Lake and the Alaska Highway (Assessment Report 7359, Plan 1).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
ASSOCIATED: Calcite Dolomite
COMMENTS: Calcite mostly interstitial to barite.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive Breccia Vein
CLASSIFICATION: Replacement Hydrothermal Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Bladed
MODIFIER: Faulted
DIMENSION: 650 x 150 x 90 Metres STRIKE/DIP: 350/35W TREND/PLUNGE:
COMMENTS: Exposed length, inferred down-dip depth, and maximum thickness of combined bedded zone and breccia zone. Approximate attitude of host rocks.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Stone	
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Barite
Dolomite
Barite Breccia
Dolomitic Breccia
Dolomitic Quartz Sandstone
Calcareous Mudstone
Limestone
Argillaceous Limestone

HOSTROCK COMMENTS: Host rocks are probably mainly Stone Formation, but Dunedin Formation may be present.

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N
CATEGORY: Assay/analysis YEAR: 1979
SAMPLE TYPE: Rock
COMMODITY GRADE
Barite 87.0000 Per cent
COMMENTS: Maximum of range of samples from bedded zone.
REFERENCE: Assessment Report 7359.

ORE ZONE: MO REPORT ON: Y
CATEGORY: Inferred YEAR: 1979
QUANTITY: 3400000 Tonnes
COMMODITY GRADE
Barite 34.7000 Per cent
COMMENTS: Estimate of grade and tonnage potential of combined bedded and breccia zones, north of creek.
REFERENCE: Assessment Report 7359, page 10.

CAPSULE GEOLOGY

The Mo developed prospect is a stratabound barite deposit, situated at the headwaters of a tributary of Sulphur Creek in the Sentinel Range of the Northern Rocky Mountains. It is 8.5 kilometres northeast of the northern end of Muncho Lake, which is on the Alaska Highway.

The rocks in the area are predominantly Lower to Upper Devonian carbonates and shales belonging to Ancestral North America (Geological Survey of Canada Map 1713A). The regional trend is north-northwest, and the rocks have been deformed into broad folds, cut by thrust faults.

The Mo claims are underlain by the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Open File 673, Assessment Report 7359). The Stone Formation consists of pale grey, very fine grained dolostone, dolostone breccia and dolomitic quartz sandstone. The Dunedin Formation comprises grey, well-bedded limestone and argillaceous limestone, and minor calcarenite and dolostone. Immediately to the east of the claims, a northeast-verging thrust places these rocks on Upper Devonian to Mississippian Besa River Formation black shale.

The Mo deposit consists of a lower, bedded barite zone, and an overlying baritic breccia zone; both are hosted by undivided Stone and Dunedin formation dolostones, probably mainly the former (Assessment Report 7359). The rocks strike north to north-northwest and dip west between 30 and 60 degrees, averaging 35 degrees. A thrust passing through the centre of the claims probably repeats the units, but apparently not the mineralization.

The bedded zone is up to 15 metres thick, and is exposed for approximately 650 metres from the north side of the tributary creek to a point high on the south side; both ends of the zone are cut off by faults. The more important segment is from the creek southwards, a strike length of 350 metres. Individual beds of barite are several centimetres to over 2 metres thick, and are separated by interbeds of mostly non-baritic dolostone. The barite is white, fine grained and laminated. Petrographic study reveals bands of radiating, relatively coarse-grained blades of barite with interstitial secondary calcite, and thin intercalations of green calcareous mudstone. The dolostone interbeds consist of dolomite and interstitial calcite and minor barite, cut by coarsely crystalline calcite-barite veinlets.

The bedded barite is overlain by a much thicker (up to 75 metres thick) and more extensive zone of baritic breccia. The breccia is irregular and consists of angular fragments of dolostone from a few centimetres to over 2 metres across. The matrix is barite and calcite. The breccia is generally coarser and less chaotic towards the base of the zone where it is described as a mosaic breccia.

Samples have been analysed for barite content, presence of contaminating elements, and specific gravity. Samples from the bedded zone range from 3 to 87 per cent barite (BaSO₄) (Assessment Report 7359). The breccia zone has sections (in the northern half of the occurrence) ranging from about 4 to 54 per cent BaSO₄, reflecting the more erratic nature of the mineralization. This feature was judged to make the breccia not viable for mining, at least south of the creek where the stripping ratio is excessive (Assessment Report 7359).

Preliminary estimates of grade and tonnage potential and stripping ratios have been made for the bedded barite zone (Assessment Report 7359). Potential reserves of barite were estimated at 2.85 million tonnes grading 50.72 per cent BaSO₄, assuming continuity of the deposit down dip for 150 metres. North of the creek, and combining the barite breccia with the bedded barite, the estimate was 3.4 million tonnes grading 34.7 per cent BaSO₄, assuming a down dip extension of 75 metres. It was considered that only this segment could be exploited by open pit mining because it is more accessible and the stripping ratio is lower here.

Similar deposits in the region, such as the BV developed prospect (094N 002) 3.5 kilometres to the south, have been interpreted as of replacement origin.

BIBLIOGRAPHY

EMPR ASS RPT *7359
EMPR EXPL 1979-330
EMPR OF 1997-16
GSC BULL 186
GSC MAP 1713A
GSC OF 673

DATE CODED: 1990/01/19
DATE REVISED: 1994/10/20

CODED BY: SBB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 009**

NATIONAL MINERAL INVENTORY:

NAME(S): **MUN**, MUN 1,2

MINING DIVISION: Liard

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 094N04E
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 04 48 N
LONGITUDE: 125 43 23 W
ELEVATION: 1528 Metres

NORTHING: 6552142
EASTING: 343945

LOCATION ACCURACY: Within 500M

COMMENTS: Located on sample section Mun 1, at the headwaters of a tributary of Sulphur Creek, 5.5 kilometres northeast of the northern end of Muncho Lake and the Alaska Highway (Assessment Report 7349, Plan 1).

COMMODITIES: Barite

MINERALS

SIGNIFICANT: Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound Massive Vein
CLASSIFICATION: Replacement Hydrothermal Industrial Min.
TYPE: E10 Carbonate-hosted barite
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 850 x 15 Metres STRIKE/DIP: 325/60W TREND/PLUNGE:
COMMENTS: Combined, exposed length of two main barite zones, and average thickness. Tabular shape assumed. General attitude given.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Stone	

LITHOLOGY: Bedded Barite
Fine Grained Dolomite
Dolomitic Breccia
Dolomitic Quartz Sandstone

HOSTROCK COMMENTS: Underlain by the Wokkpush Formation; overlain by the Dunedin Formation

GEOLOGICAL SETTING

TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Muskwa Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1979
SAMPLE TYPE: Chip
COMMODITY GRADE
Barite 50.9300 Per cent

COMMENTS: Continuous chip sample over exposed width of 17.4 metres from section Mun 2.

REFERENCE: Assessment Report 7349.

CAPSULE GEOLOGY

The Mun prospect is a stratabound barite deposit, situated at the headwaters of a tributary of Sulphur Creek in the Sentinel Range of the Northern Rocky Mountains (Assessment Report 7349, Plan 1). It is 5.5 kilometres northeast of the northern end of Muncho Lake, which is on the Alaska Highway.

The rocks in the area are predominantly Lower to Upper Devonian carbonates and shales belonging to Ancestral North America (Geological Survey of Canada Map 1713A). The regional trend is north-northwest, and the rocks have been deformed into broad folds, cut by thrusts and other faults.

The Mun claims are underlain by the Lower Devonian Wokkpush Formation and the Middle Devonian Stone and Dunedin formations (Geological Survey of Canada Open File 673, Assessment Report 7349). The Wokkpush Formation comprises distinctive, yellow-weathering dolomitic quartz sandstone and dolostone. The Stone Formation consists of pale grey, very fine grained dolostone, dolostone breccia and dolomitic quartz sandstone. The Dunedin Formation comprises

CAPSULE GEOLOGY

grey, well-bedded limestone and argillaceous limestone, and minor calcarenite and dolostone. Also, the Upper Silurian to Lower Devonian Muncho-McConnell Formation may be present in the southeastern corner of the property.

The Mun deposit consists of two bands of bedded barite, possibly a single, discontinuous unit, within the Stone Formation (Assessment Report 7349). The setting is similar to the Mo occurrence (094N 008) 3 kilometres to the northeast, and the BV occurrence (094N 002) 2 kilometres to the southeast, although in those there is a zone of baritic breccia immediately overlying the bedded barite. The Mun occurrence differs in that the barite may be at a higher level in the Stone Formation, and there is no baritic breccia above it (Assessment Report 7349). The occurrence is situated in a broad, northerly-plunging syncline. The bedded barite and the host rocks generally strike northwest and dip gently to steeply southwest, although there is some variation due to faulting and folding in the area.

One of the two bands of bedded barite is in the north central part of the property. It dips 60 degrees southwest and can be traced along strike for about 500 metres; its exposed width is about 13 metres, but it may be wider. A continuous chip sample (sample section Mun 1) across the zone assayed 50.22 per cent barite (BaSO₄) over 12.95 metres (Assessment Report 7349).

The other barite zone, near the northwest corner of the property, is larger and thicker, and extends for about 350 metres. Here, the barite beds dip north at 58 degrees. A continuous chip sample (sample section Mun 2) assayed 50.93 per cent BaSO₄ over 17.4 metres (Assessment Report 7349). East of this locality, the strike of the host dolostone changes to southeast, and barite float can be traced downslope for 300 metres towards the first barite zone. Before it reaches it, however, there is an east-striking fault containing highly fractured dolostone and a 3-metre wide, near vertical vein of barite.

Similar deposits in the region, such as the BV occurrence (094N 002), have been interpreted as of replacement origin.

BIBLIOGRAPHY

EMPR EXPL 1979-330
EMPR ASS RPT *7349, 15090
EMPR IND MIN FILE (Butrenchuk, S.B. (1990): Barite Deposits in British Columbia; unpublished Open File manuscript)
GSC BULL 186
GSC OF 673
GSC MAP 1713A

DATE CODED: 1990/01/19
DATE REVISED: 1994/10/18

CODED BY: SBB
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094N 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **SCAT**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094N14W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 47 59 N
LONGITUDE: 125 23 33 W
ELEVATION: 1150 Metres

NORTHING: 6631530
EASTING: 365765

LOCATION ACCURACY: Within 500M

COMMENTS: Located on mineralized outcrop on Scatter River on Scat 4 claim, in the Caribou Range, 85 kilometres west-northwest of Nelson Forks (Assessment Report 10810, Map 2).

COMMODITIES: Zinc Silver Lead Fluorite Barite

MINERALS

SIGNIFICANT: Sphalerite Galena
ASSOCIATED: Barite Fluorite Pyrite Calcite Quartz
Bitumen

COMMENTS: Barite and fluorite occur in nodules or concretions.

ALTERATION: Limonite

COMMENTS: Based on the association of ferricrete in some outcrops.

ALTERATION TYPE: Oxidation

MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stratabound Podiform
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.

SHAPE: Tabular

DIMENSION: Metres

STRIKE/DIP:

TREND/PLUNGE: /

COMMENTS: Strata generally strike north and dip gently east.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE: Upper Devonian
GROUP: Undefined Group
FORMATION: Besa River
IGNEOUS/METAMORPHIC/OTHER:

LITHOLOGY: Black Carbonaceous Pyritic Slate
Cherty Slate
Chert
Cherty Mudstone
Ferricrete

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Liard Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1982

SAMPLE TYPE: Rock

COMMODITY: Zinc GRADE: 0.3100 Per cent

COMMENTS: Geochemical analysis. Highest value.

REFERENCE: Assessment Report 10810.

CAPSULE GEOLOGY

The Scat showing consists of minor lead-zinc-barite mineralization in black slate. The occurrence is centred on a mineralized outcrop on Scatter River on the Scat 4 claim, in the Caribou Range in the Northern Rocky Mountains, 85 kilometres west-northwest of Nelson Forks (Assessment Report 10810, Map 2). Interest in the area was generated by widespread soil and silt geochemical anomalies, although they are generally sporadic and weak.

The area is underlain by three units: well-bedded limestone of the Middle Devonian Dunedin Formation; slate of the Upper Devonian Besa River Formation; and shale, siltstone and quartz sandstone of the Mississippian Mattson Formation (Assessment Report 10810; Geological Survey of Canada Open File 673). All are part of Ancestral North America (Geological Survey of Canada Map 1713A). The rocks generally strike north and dip gently east. A few minor faults are present, striking approximately 040 degrees.

CAPSULE GEOLOGY

The most important unit is the Besa River Formation, which is mainly black, carbonaceous slate with interbedded siliceous rocks. The slate locally contains nodules and concretions of barite, fluorite, chert or pyrite, or a combination of these; bitumen was also noted (Assessment Report 10810). Barite nodules, which may consist of coarse, bladed crystals, are characteristic of the formation, and may reach 40 centimetres in diameter. Some outcrops are marked by ferricrete, and iron seeps occur locally.

The area was explored to discover the source of lead, zinc and silver anomalies found in stream sediments. The most anomalous were traced to siliceous beds or to lenses or nodules of chert or cherty mudstone in the Besa River slate containing veins of calcite, barite and pyrite, with minor sphalerite, galena and quartz. A sample from one such outcrop (on which the occurrence is centred) from near the top of the formation was analysed at 0.31 per cent zinc (Assessment Report 10810).

No single stratigraphic horizon carried a statistically significant increase in any of the metals of interest (Assessment Report 10810). Anomalies of respective metals in the soil sample survey generally do not coincide.

BIBLIOGRAPHY

EMPR EXPL 1982-352
EMPR ASS RPT *10810
GSC BULL 186
GSC OF 673
GSC MAP 1713A

DATE CODED: 1994/10/12
DATE REVISED: 1994/10/20

CODED BY: CJR
REVISED BY: CJR

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **094P 001**

NATIONAL MINERAL INVENTORY:

NAME(S): **KWOKULLIE**

MINING DIVISION: Liard

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 094P07W
BC MAP:

UTM ZONE: 10 (NAD 83)

LATITUDE: 59 20 42 N
LONGITUDE: 120 52 24 W
ELEVATION: 609 Metres

NORTHING: 6580400
EASTING: 620944

LOCATION ACCURACY: Within 1 KM
COMMENTS:

COMMODITIES: Coal

MINERALS

SIGNIFICANT: Coal
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
COMMENTS: Bed orientation is horizontal.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

<u>STRATIGRAPHIC AGE</u>	<u>GROUP</u>	<u>FORMATION</u>	<u>IGNEOUS/METAMORPHIC/OTHER</u>
Upper Cretaceous	Undefined Group	Dunvegan	

LITHOLOGY: Coal

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

At the Kwokullie showing, about 1 metre of coal is reported near the bottom of a roadside burrow pit at a depth of approximately 6 metres. The pit has been subsequently filled in. The presence of coal was confirmed when a small sample was brought back to the district geologist at Charlie Lake (B. Baraniski, personal communication, 1985). The actual thickness and the host formation is uncertain though Geological Survey of Canada Map 1448A would suggest the Upper Cretaceous Dunvegan Formation as host.

BIBLIOGRAPHY

GSC P 75-11
GSC BULL 328
GSC MAP 1448A

DATE CODED: 1985/08/27
DATE REVISED: 1995/03/10

CODED BY: ASL
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

MINFILE NUMBER: 094B 002		NAME: BRANHAM FLATS			STATUS: Past Producer	
<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>	
1940	1		Gold	6,594		
1935	1		Gold	3,608		

SUMMARY TOTALS: 094B 002

NAME: **BRANHAM FLATS**

	<u>Metric</u>	<u>Imperial</u>
Mined:	2 tonnes	2 tons
Milled:	tonnes	tons
Gold:	10,202 grams	328 ounces

Recovery:

1940: Recovered from Branham Flats Between 1936 and 1940.
 1935: Recovered from Branham Flats between 1931 and 1935.

Comments:

RUN DATE: 26-Jun-2003
RUN TIME: 12:00:57

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

PAGE: 3
REPORT: RGEN0200

MINFILE NUMBER: **094B 004** NAME: **PEACE RIVER** STATUS: Past Producer

<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>
1945	1		Gold	3,670	
1940	1		Gold	22,302	
1935	1		Gold	44,759	
1930	1		Gold	4,572	

SUMMARY TOTALS: 094B 004

NAME: **PEACE RIVER**

	<u>Metric</u>	<u>Imperial</u>
Mined:	4 tonnes	4 tons
Milled:	tonnes	tons
Gold:	75,303 grams	2,421 ounces

Recovery:

Comments:

1945: Production from 1941-1945, excluding Branham Flats (Bulletin 28).
1940: Production from 1936-1940, excluding Branham Flats (Bulletin 28).
1935: Production from 1931-1935, excluding Branham Flats (Bulletin 28).
1930: Production from 1926-1930, excluding Branham Flats (Bulletin 28).

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

MINFILE NUMBER: 094B 026		NAME: BULLHEAD MOUNTAIN		STATUS: Past Producer	
<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>
1960	135		Coal		135,170
1959	213		Coal		213,200
1958	709		Coal		527,980
1957	1,179		Coal		907,200
1956	2,817		Coal		2,816,810
1955	2,371		Coal		2,371,380
1954	1,592		Coal		1,592,110
1953	2,151		Coal		2,150,900
1952	2,151		Coal		2,150,900
1951	1,531		Coal		1,531,330
1950	4,482		Coal		4,482,400
1949	5,586		Coal		5,586,450
1948	2,857		Coal		2,856,700
1947	1,573		Coal		1,572,770
1946	681		Coal		680,720
1945	844		Coal		844,300
1944	2,743		Coal		2,743,200

SUMMARY TOTALS: 094B 026

NAME: **BULLHEAD MOUNTAIN**

	<u>Metric</u>	<u>Imperial</u>
Mined:	33,615 tonnes	37,054 tons
Milled:	tonnes	tons
Recovery: Coal:	33,163,520 kilograms	73,113,026 pounds

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

MINFILE NUMBER: 094C 026	NAME: JIM MAY CREEK	STATUS: Past Producer
Production Year	Tonnes Mined	Tonnes Milled
1940	1	
1885	1	
		Commodity
		Gold
		Gold
		Grams Recovered
		1,866
		871

SUMMARY TOTALS: 094C 026

NAME: **JIM MAY CREEK**

<u>Metric</u>	<u>Imperial</u>
Mined: 2 tonnes	2 tons
Milled: tonnes	tons
Gold: 2,737 grams	88 ounces

Recovery:

Comments:

1940: Production between 1936 and 1940. Unknown quantity mined.
 1885: Production between 1881 and 1885. Unknown quantity mined.

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

MINFILE NUMBER: 094D 007	NAME: MCCONNELL CREEK	STATUS: Past Producer
Production Year	Tonnes Mined	Tonnes Milled
1941	1	
		Commodity
		Gold
		Grams Recovered
		37,708
		Kilograms Recovered

SUMMARY TOTALS: 094D 007

	NAME: MCCONNELL CREEK
	<u>Metric</u>
Mined:	1 tonnes
Milled:	tonnes
	<u>Imperial</u>
	1 tons
Recovery:	tons
	Gold: 37,708 grams
	1,212 ounces
Comments:	
1941:	For period 1931-1941, amount mined unknown (NMI 094D16 Au4).

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

MINFILE NUMBER: 094E 001	NAME: MCCLAIR CREEK	STATUS: Past Producer
Production Year	Tonnes Mined	Tonnes Milled
1931	1	1
		Commodity
		Gold
		Grams Recovered
		3,265
		Kilograms Recovered

SUMMARY TOTALS: 094E 001

	NAME: MCCLAIR CREEK
	<u>Metric</u>
Mined:	1 tonnes
Milled:	1 tonnes
	<u>Imperial</u>
Recovery:	
	1 tons
	1 tons
	3,265 grams
	105 ounces
Comments:	
	1931: 1931-1935: over 1000 pans and 26 bulk samples - unknown tonnage.

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **094E 026** NAME: **BAKER** STATUS: Past Producer

<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>
1997	1,600	1,945	Silver	220,337	
			Gold	35,085	
			Copper		4,476
1996	2,337	2,337	Silver	507,267	
			Gold	52,720	
			Copper		8,600
1983	22,286	29,021	Silver	6,966,370	
			Gold	361,111	
1982	26,618	31,030	Silver	11,234,669	
			Gold	528,532	
1981	17,545	17,545	Silver	4,883,930	
			Gold	306,525	

SUMMARY TOTALS: 094E 026

NAME: **BAKER**

	<u>Metric</u>	<u>Imperial</u>
Mined:	70,386 tonnes	77,587 tons
Milled:	81,878 tonnes	90,255 tons
Recovery:		
Silver:	23,812,573 grams	765,591 ounces
Gold:	1,283,973 grams	41,281 ounces
Copper:	13,076 kilograms	28,828 pounds

Comments:

1997: B vein; Information Circular 1998-1, page 22.
 1996: B vein; Information Circular 1998-1 and T. Schroeter, 1997.
 1983: Operations ceased Nov. 30, 1993. Stockpile treated.
 1982: Ore from stockpile.

RUN DATE: 26-Jun-2003
 RUN TIME: 12:00:57

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

PAGE: 10
 REPORT: RGEN0200

MINFILE NUMBER: **094E 050** NAME: **SHASTA** STATUS: Past Producer

<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>
2000	8,580	8,580	Silver	86,700	
			Gold	1,600	
1991	51,500	51,500	Silver	17,482,101	
			Gold	310,949	
1990	57,937	57,937	Silver	13,257,913	
			Gold	257,687	
1989	13,096	13,096	Silver	2,192,030	
			Gold	32,593	

SUMMARY TOTALS: 094E 050

NAME: **SHASTA**

	<u>Metric</u>	<u>Imperial</u>
Mined:	131,113 tonnes	144,527 tons
Milled:	131,113 tonnes	144,527 tons
Recovery:		
Silver:	33,018,744 grams	1,061,576 ounces
Gold:	602,829 grams	19,381 ounces

Comments:

2000: Est. recovery from avrg. lead grade of 10.29 g/t gold equivalent.
 1991: Ore also from Multinational B (094E 026).

RUN DATE: 26-Jun-2003
 RUN TIME: 12:00:57

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

PAGE: 11
 REPORT: RGEN0200

MINFILE NUMBER: 094E 066		NAME: LAWYERS		STATUS: Past Producer		
<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>	
1992	30,838	108,853	Silver	23,629,467		
			Gold	1,006,788		
1991	186,855	175,165	Silver	25,345,660		
			Gold	1,266,859		
1990	162,791	184,248	Silver	36,120,000		
			Gold	1,637,700		
1989	190,396	151,603	Silver	28,089,000		
			Gold	1,490,634		

SUMMARY TOTALS: 094E 066

NAME: **LAWYERS**

	<u>Metric</u>	<u>Imperial</u>
Mined:	570,880 tonnes	629,287 tons
Milled:	619,869 tonnes	683,289 tons
Recovery:	Silver: 113,184,127 grams	3,638,949 ounces
	Gold: 5,401,981 grams	173,677 ounces

Comments: 1991: Includes about 60,000 tonnes from the AI (094E 091).

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER:	094E 091	NAME:	AL (THESES II/III)	STATUS:	Past Producer
Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1986	209	209	Gold	71,694	

SUMMARY TOTALS: 094E 091

NAME: **AL (THESES II/III)**

	<u>Metric</u>	<u>Imperial</u>
Mined:	209 tonnes	230 tons
Milled:	209 tonnes	230 tons
Recovery:	Gold: 71,694 grams	2,305 ounces

Comments: 1986: Through a 5.5-tonne pilot mill.

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

MINFILE NUMBER: 094E 094		NAME: KEMESS SOUTH		STATUS: Producer		
<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>	
2002	10,527,566	17,308,000	Gold	8,780,511		
			Copper		33,061,225	
2001	32,900,000	15,400,000	Gold	8,619,000		
			Copper		30,068,027	
2000	34,618,846	14,138,443	Silver	4,871,000		
			Gold	7,028,413		
			Copper		22,856,450	
1999			Gold	6,220,000		
			Copper		22,700,000	
1998	7,482,000	7,482,000	Gold	2,393,000		
			Copper		9,690,000	

SUMMARY TOTALS: 094E 094

NAME: **KEMESS SOUTH**

	<u>Metric</u>	<u>Imperial</u>
Mined:	85,528,412 tonnes	94,278,935 tons
Milled:	54,328,443 tonnes	59,886,857 tons
Recovery:		
Silver:	4,871,000 grams	156,606 ounces
Gold:	33,040,924 grams	1,062,289 ounces
Copper:	118,375,702 kilograms	260,973,677 pounds

Comments: 2002: Year end results.
 2000: Ore mined includes waste. Silver produced to end of September.

MINFILE PRODUCTION REPORT
 GEOLOGICAL SURVEY BRANCH
 ENERGY AND MINERALS DIVISION

MINFILE NUMBER: 094K 003		NAME: MAGNUM		STATUS: Past Producer	
<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>
1975			Copper		808,665
1974	170,531	182,751	Copper		3,795,283
1973	12,221		Copper		
1971	166,932	160,633	Copper		6,106,008
1970	152,528	154,748	Copper		3,963,175

SUMMARY TOTALS: 094K 003

NAME: **MAGNUM**

	<u>Metric</u>	<u>Imperial</u>
Mined:	502,212 tonnes	553,594 tons
Milled:	498,132 tonnes	549,097 tons
Recovery: Copper:	14,673,131 kilograms	32,348,707 pounds

Comments:

1975: No production; 2887 t. of copper concentrate (Mining 1975-1980).
 1973: Ore stockpiled, no shipments.
 1970: Extra ore milled probably derived from pre-1970 adit development.

RUN DATE: 26-Jun-2003
RUN TIME: 12:00:57

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

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REPORT: RGEN0200

MINFILE NUMBER:	094M 003	NAME:	FIRESIDE	STATUS:	Producer
Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1998	18,000	18,000	Barite		18,000,000
1985	41,071	41,071	Barite		41,071,000

SUMMARY TOTALS: 094M 003

	NAME:	FIRESIDE		
	<u>Metric</u>		<u>Imperial</u>	
	Mined:	59,071 tonnes	65,115 tons	
	Milled:	59,071 tonnes	65,115 tons	
Recovery:	Barite:	59,071,000 kilograms	130,229,226 pounds	
Comments:	1998:	T. Schroeter, personal communication, 1998.		